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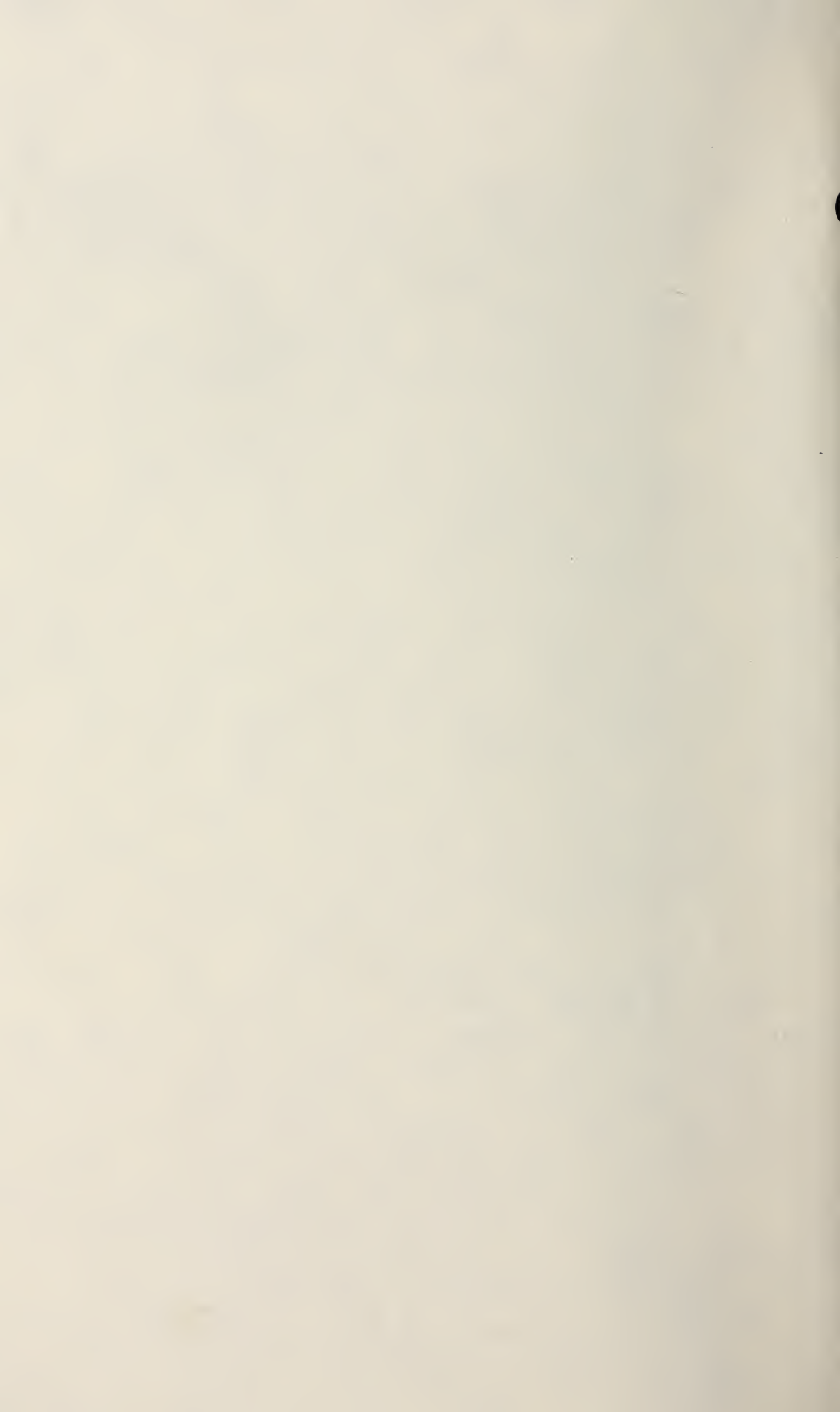
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Vol. 14.

No. 1

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Monthly
MAGAZINE

JANUARY, 1891.

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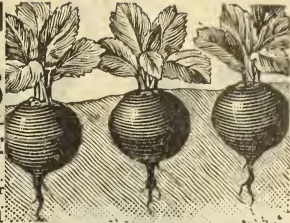
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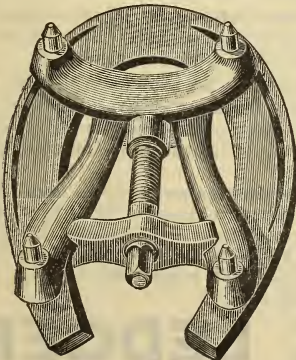
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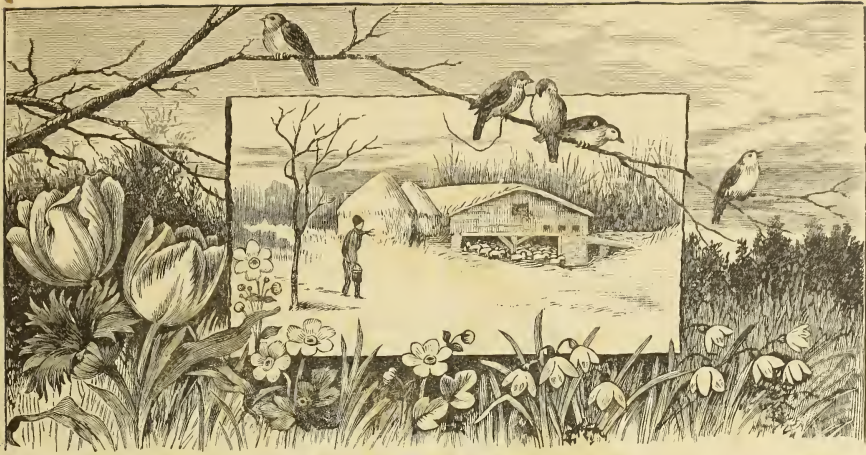
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JANUARY, 1891.

THE OUTLOOK for the gardener, the florist and the fruit grower is now, at the commencement of a new year, a subject of the highest interest. What will be the reward to balance the account for another twelve month's labor, care and anxiety? This cannot be answered with certainty in any case. What with unpropitious weather, injurious insects, blights, rust and rot, the plant grower, in any field, needs a strong will, a stout heart and nerve and muscle. But without these, or compensating qualities, success cannot be attained in any line of business.

The weather changes in nearly all parts of the country are such that we cannot depend confidently upon favorable seasons for our crops, but must make the best provision possible for them under any circumstances and take the chances. The vegetable gardener and the fruit-grower know how important and unreliable an element this is in his calculations; especially have they experienced, during the last year, the heavy losses that ensue from bad weather.

Competition is so close that the successful grower of any crop finds it necessary to raise only the best varieties, or those that sell most readily in his market. Practically, what brings the best returns is the best variety to raise, and what this is, whether of fruit or vegetables, depends on the reputation the variety has established in any given local-

ity. Growers of vegetables can never give up an interest in procuring seeds of the best varieties that are brought out, and at this season of the year they can profitably look over the whole field—taking into consideration their own experience and observation, learning from others in the same work, and especially studying up all the printed information on the subject. The strawberry grower, making, as he does, a new plantation every year, must be equally vigilant in keeping abreast of the times, and the same is true in relation to all horticultural crops.

The next essential for the highest success is soil naturally well adapted to the crop and prepared in the best manner. In the preparation are involved all the necessary operations preceding planting, such as ditching or draining, plowing and pulverizing, and manuring the soil. Well drained soil is the foundation of all good gardening operations, and without it labor and manure may be said to be wasted to a great extent. Notwithstanding this fact so well known, we see not unfrequently some of the most important cultures undertaken without drainage on lands which are in the greatest need of it. This is a most extravagant operation. A manufacturer who should carry on business with the same relative amount of waste that we see in many operations of gardening and fruit-growing, would quickly fail.

Economically fertilizing the soil to the extent, if possible, of its productiveness, is of the greatest importance. As a general rule the richness of the soil is the measure of the profit of the crop. The same amount of labor of cultivation is necessary for a light or heavy crop, and the labor expended is the costliest item in crop production.

Having good soil well prepared, the next point of most importance is to plant so as to have a full crop, or in other words, to have as many plants on the ground as the land can support. This statement applies to all crops. The importance of full grounds is especially apparent in fruit-growing, whether it is a field of strawberries or an apple orchard. One cause of fruit plants failing to grow is careless handling between the time they are taken up in the nursery and the time they are finally planted. Now, this danger the planter needs to guard against. How he shall do it depends upon circumstances, but he must be vigilant at this point of proceedings. After a planting of fruits is made, of any kind, it is difficult to fill the vacancies that occur at the first setting, hence this is an additional reason why every step in the operation be taken with the greatest care. Partial failures in vegetable grounds can be more easily overcome and vacancies made good, but frequently it is not done. Getting crops in early, or at their proper season is very important, and often there is a deficiency at harvesting time from this cause, or else inferiority in quality. The onion, for instance, is a vegetable that, to raise in the best manner, needs to be put in promptly at the earliest opportunity; peas and potatoes for first crop are similar cases. The late setting of strawberry plants, and of all fruit trees is apt to prove a great disadvantage.

When one has discovered which kinds of crops he can best produce, it is important to hold steadily to raising them, and not, on account of fluctuations in the market, to shift from one thing to another from year to year. This is the regular movement, ebb and flow, of the great mass of cultivators, and the result is that some crops are always overproduced or underproduced. The onion is a notable example of this sort. Among fruits the strawberry is constantly subject to this shifting movement. Only the steady cultivator gets any benefit by a short crop, while the

mass of growers are nearly always met with a full and low-priced market. Unusual success in any particular crop, by reason of superior local advantages, will often induce many others to undertake similar production, and often with the effect of finding sale with little or no profit at most, or perhaps worse, with an actual loss. Celery growing the past year has been widely extended, and in many cases far beyond the needs of local consumption, leaving heavy stocks to be thrown into the great markets where but little is realized from them. A notable instance among fruits in the northern States at the present time is grape growing. Certain localities favorable to the production of grapes of fine quality having established a profitable industry after many years of trial and difficulty, now find that their success has encouraged many persons to plant vineyards on grounds with no particular adaptation to them and with the result of producing a large mass of fruit of inferior grade. The result is not that the good fruit brings the best price, but the price of the fruit of poor quality determines that of the whole without distinction. Such is the fact. Some newspaper writers maintain that an overproduction of fruit is impossible. We know that it is not impossible, and especially with perishable fruits like the strawberry and the grape. Though the latter under certain conditions can be kept several months, yet these conditions are such that but few vine-growers can command them, and the result is the fruit must be sent forward for sale as it matures, without reference to the state of the market. Thus to-day a large proportion of grape-growers in this State are living meagerly and discounting their returns before their crops are matured. Some parties having vines for sale have led many to plant vines in unsuitable localities, claiming that a crop of grapes can be raised wherever corn can be grown. A gross misstatement, as we all know.

Shall we continue to plant apple orchards? Yes, but not largely and only in the most suitable locations and of a few of the most profitable varieties. Comparatively little planting of apple trees has been done the past ten years, population has increased, many of the old orchards are ruined and many others are becoming so. In the future more care will be taken of orchards than formerly.

FINE VEGETABLES.

Some forty years since a few varieties of fine vegetables superior to any then in use, were introduced into this country, among which were the Early Paris Cauliflower, the Winningstadt Cabbage and the Early Short Horn Carrot, and their introduction marks the commencement of a new and popular interest in vegetables, and this interest has continued with increasing intensity to the present time. During this period the improvement of all kinds of culinary vegetables has been very great, and the emulation in raising new and improved varieties was never higher than it is to-day. The more appreciative of market gardeners



First Prize, Vick's Ideal Cauliflower, raised by JOSEPH WARD,
Eau Claire, Wis.

and amateurs take up these new kinds and learn their value, but their general distribution among the people has been slow, for several reasons. One of these is that people hold long to a variety with which they are acquainted; new varieties have also necessarily been somewhat more expensive than old ones, and for this reason those who have dealt in seeds on commission have found it more profitable to use the old varieties, and thus those who procure such seeds, and they are by far the larger number of purchasers, do not have the opportunity to keep up with the advancements of the day. However, as the better varieties become well known, they find their way into all the channels

of seed distribution. The surest indication of what the people want to learn about fine vegetables is the interest they manifest in their exhibitions at the state and county fairs. Some account was given in the November number of this MAGAZINE of the show of vegetables at the last Illinois State Fair, at Peoria, and we now present engravings of some of the prize vegetables which were there exhibited. We have endeavored to obtain from the growers some short statements in regard to their methods of culture, and some of them have responded, as will be found in this connection. Fine vegetables cannot be raised by careless cultivators, the attention given them must be the best from the beginning to the close, it must include a proper selection of soil and location, good tillage, good manuring, good cultivation, and watchful care at every step. Even in a still higher degree does this apply to the seed-grower, who must combine high qualifications to successfully prosecute his work which is so beneficial to the world. A careful study of the engravings here presented will, we think, show the close competition of the prize-takers, and also, in some cases, the grades of superiority are apparent.

The letters of our correspondents are all brief, more so, perhaps, than desirable, and some who could, no doubt, give valuable hints have failed to respond. The following will be read with interest :

FROM A CAULIFLOWER EXHIBITOR.

I send you a few words, which you ask, about the culture of Cauliflower. A good



Second Prize, Vick's Ideal Cauliflower, raised by WILLIAM KLOSS,
Fishcreek, Wisconsin,

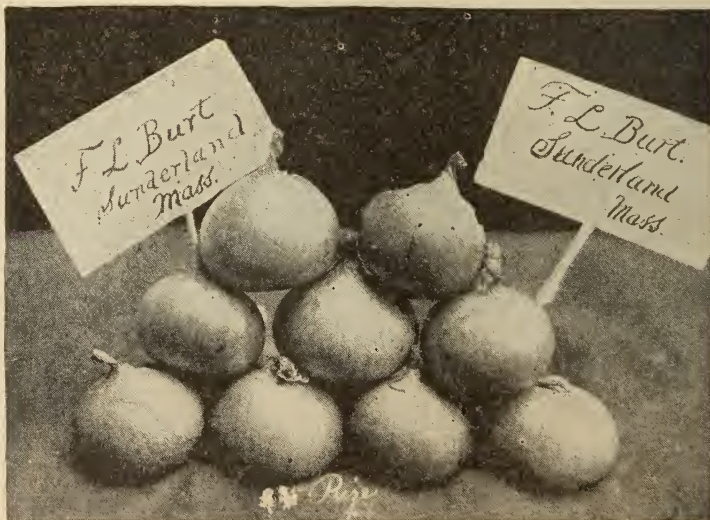
grass sod well rotted is best, and any soil is better for plenty of well rotted manure. For marketing keep the head well covered. Good heads will always find a market. I am of the opinion that the Ideal is the best Cauliflower in cultivation, and a good variety has a great deal to do with raising a marketable crop. Please accept thanks for the quick returns of our prizes. JOHN WARD,

Eau Claire, Wis.

FROM A CABBAGE AND ONION PRIZETAKER.

Our method of cultivation of Cabbage is to transplant from seed-bed into the open field as the plants are ready and danger from frost is over, in rows three feet apart, and plants in rows from one and one and a half to two feet apart according to variety. We usually

hoe our Cabbage twice and cultivate often until the plants spread so far as to prevent.



First Prize, Danvers Yellow Onion, raised by F. L. BURT, Sunderland, Mass.

In growing Onions we sow the seed in rows one foot apart, in a well prepared

bed, as soon as the ground can be cultivated in the spring. We cultivate the ground

twice when the plants are small, and keep them free from weeds throughout the season.

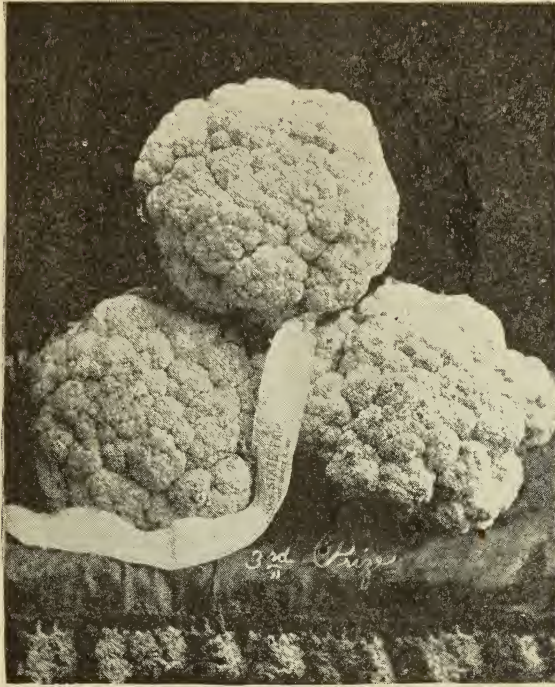
We grow both Cabbage and Onions on well enriched sandy loam, and supply the home market as required.

G. H. NEWSOM & SON
Hornellsville, N. Y.

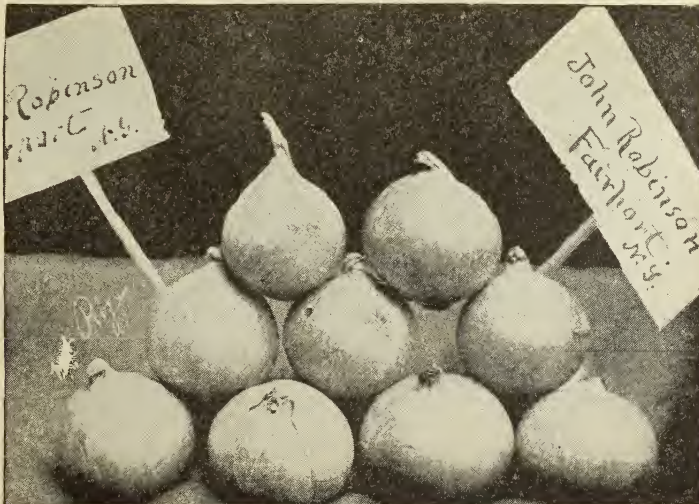
FROM THE FIRST PRIZE-TAKER FOR ONIONS.

It is customary in this section that land intended for the culture of Onions should be plowed the previous fall. Just as soon as the ground can be safely worked in the spring, it has been my custom to harrow it with a good disc pulverizer, and, if the soil is of a nature to become packed firm during the winter and spring months, it may be of advantage to pulverize both ways thoroughly. After a careful

trial of stable manure as a fertilizer for the onion crop, I am convinced that larger, finer and also an earlier crop of Onions can be grown from an application of a good



Third Prize, Vick's Ideal Cauliflower, raised by JOHN WARD,
Eau Claire, Wis.



Second Prize, Danvers Yellow Onion, raised by JOHN ROBINSON, Fairport, N. Y.

standard brand of commercial fertilizer than anything else that can be secured. One ton per acre, sown broadcast, is none too much to use on this crop. As the

growing time of the onion is short, it is apparent that lands in a high state of cultivation would produce more than those deficient in plant food. I have used the Meeker smoothing harrow with good success to prepare the land for the seed-sower. This harrow crushes all hard lumps of earth and gives the field a perfectly smooth surface.



First Prize, All Seasons Cabbage, raised by DAVIS BROTHERS,
Jackson, Mich.

It has been my custom to sow onion seed in drills fourteen inches apart, using four and one-half pounds of seed per acre. As soon as the onion plants are well up, so that the rows can be defined, I cultivate with a push hoe or a good Planet Jr. hand cultivator. The weeds that may be in the rows of onions it is necessary to pick out by hand. If the work be well done the first time, subsequent cultivation is more easy.

In order that a full crop may be realized it is necessary to continue cultivation until the bulb is well matured and the onion tops are falling down. When the tops are dead they may be pulled out, as in case rainy weather should set in they are inclined to root themselves more firmly in the ground.

If the crop is to be held until the winter months, it is not desirable to remove the

tops, for onions keep in much better condition with their tops on. But if intended for immediate use they may be cut in the field and shipped in sacks or barrels. The sooner the crop can be removed from the field to shelter from the sun and rain the finer the color, and, as a rule, it also adds to the keeping qualities. Until very cool weather they may, if desired, be spread to the depth of twelve inches on an airy platform in a shed or special building prepared for the purpose.

F. L. BURT,

Sunderland, Mass.

FROM JOHN ROBINSON,
ONION GROWER.

My method of growing Onions is to keep the ground very rich with plant food, and keep as free as possible from weeds. I market my onions when perfectly ripe and dry. For further hints on onion growing would say that the seasons are so very different that I find something new to be learned every year to grow them successfully.

J. ROBINSON,

Fairport, N. Y.

HOW I GROW CELERY.

I prepare my ground thoroughly the previous fall, using well decomposed barnyard manure at the rate of fifty tons to the acre. If short, stocky Celery is wanted, cow manure is used, if tall Celery is wanted, I use horse manure.

The ground for my seed-bed I also prepare in the fall, by turning it up in high ridges four feet apart. On the first approach of spring these ridges are levelled down and rows made crosswise, eight inches apart, and the seed planted. I press the soil down with my feet and afterward level it down with the back of the rake. As soon as the tiny little plants begin to show themselves, I stir the soil between the rows with the Excelsior weeding hook, destroying what weed seeds may have germinated. As soon as the plants are well above ground, I thin them out carefully so that they may not crowd each other. Thus I

secure strong, stocky plants with an abundance of fibrous roots. This is the great secret of success in celery growing.

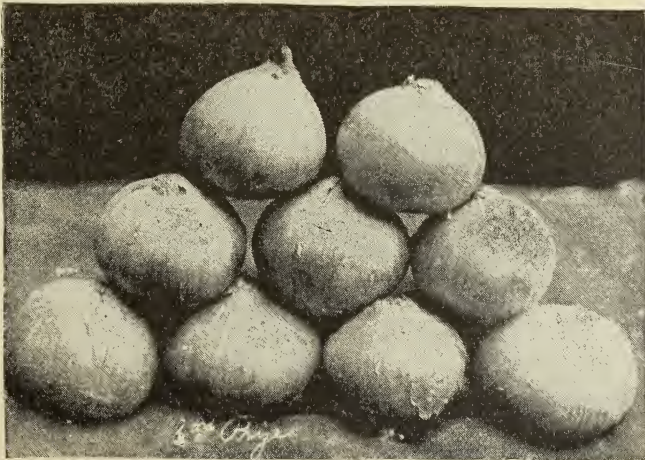


Second Prize, All Seasons Cabbage, raised by J. D. CRESS,
Jackson, Mich.

Unlike other celery growers, I set my plants in rows only one foot and a half apart, and the plants six inches apart in the rows. I keep them growing by frequent stirring of the soil around the plants and between the rows, not hilling up. Instead of spreading out the plants grow naturally straight, and the bleaching process goes on with the growth.

Toward the middle or latter end of October, I dig pits one foot and a half wide and deep enough so that when the celery is placed upright in these, with their roots on, the tops will be level with the ground. The celery must not be dug in wet or damp weather, as this will make it decay in a short time.

On approach of cold weather I cover it up with boards and straw. Thus I have access to it any time during winter, no matter how cold it is.



Third Prize, Danvers Yellow Onion, raised by G. H. NEWSOM & SON, Hornellsville, N. Y.

My trade is mostly retail, with first-class customers, who are willing to pay for a choice article, and prefer to get it fresh from the garden. I put it up in ten cent bunches, averaging three stalks in a bunch.

M. WETTERLING, *Ionia, Mich.*

SOME POINTS ON CELERY.

The most I know about celery growing was learned from your instructions years gone by. Some reasons for my success are, probably, my location and strict atten-

tion to the crop while growing. I would recommend the edge of a marsh — a mixture of muck and heavy soil — as the best location. My plan for marketing is to keep the roots on, packing it crossways in the box, changing ends with each layer, and without tying. I think it keeps fresher in this way.

EDWARD GORHAM,
Hastings, Mich.

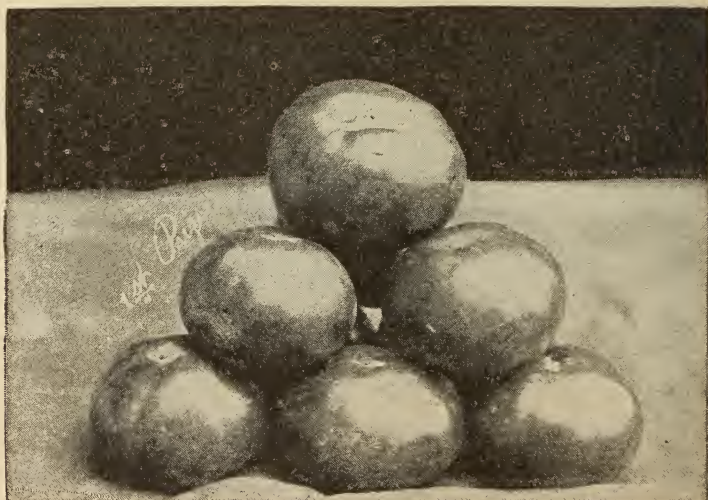


Third Prize, All Seasons Cabbage, raised by G. H. NEWSOM & SON,
Hornellsville, N. Y.

THE FIRST PRIZE TOMATOES.

It is with pleasure that I reply to your request as to my method of growing the seventy-five dollar prize McCollum hybrid Tomatoes, for the benefit of readers of your MAGAZINE. I would like first to say they are an excellent, smooth, solid variety of

good size. It may seem to many that it must be a very scientific method, but I am sure it was very simple. My gardening is on limited time, before business hours,



First Prize, McCollum's Hybrid Tomato, raised by B. A. FERRIS, Auburn, N. Y.

eight o'clock A. M., and also on a limited scale, sufficient for the wants of a small family. The soil a sandy loam, well pulverized and enriched with stable manure. I

have it plowed to a good depth, and after raking it level, that the rains may benefit all parts, I set my plants about three feet apart, setting stakes five feet high at the same time. As they grow I tack each branch on with leather or cloth strips, cutting off a few branches, and with a good hoeing occasionally, my course of treatment is finished. It is simple, but successful.

B. A. FERRIS, *Auburn, N. Y.*

TRAINING TOMATOES.

I will state to you an experiment I made this last season with about two hundred



First Prize, Golden Self Blanching Celery, raised by CHARLES H. GRAHAM, Bowling, Mich.

and fifty plants of McCollum's Hybrid Tomato and a few others I intended to grow for the fair. I tried the trellis plan for training them, and I think it is the only proper way of growing tomatoes; but it may be a little too early for us out here to adopt this practice, since labor is high and land more plentiful than in the Eastern States. My plan of growing them with less labor might be to tie up the main stem to stakes with rye straw, and prune off the side sprouts to the height of three feet, and then draw wires along each side to save time in tying up. I think it is the only proper way to cultivate tomatoes. I had them not over four feet apart in the rows, and went through them with the cultivator until the crop was beginning to ripen.

W. H. SEIBOLD,

Peoria, Ill.

TO CULTIVATE TOMATOES FOR GENERAL CROP.

I start my tomato seeds in hot-beds, the first of February, and transplant in planting boxes; grow them slowly, strong, and transplant in field as soon as frost will permit. I choose sandy loam for a general crop; they grow smoother, firmer and better. I prepare my ground as for corn, and set the plants four feet apart each way, so I can cultivate them each way. If the land is very poor, I manure with barnyard manure, as for corn. If you want early ones, sandy soil is best, but will not crop so well. I put the tomatoes in bushel boxes, or crates, for market. I always plant all the smooth and solid kinds, for they are best.

Your McCollum tomato grew well, and has proved, with me, a good cropper, smooth and firm, and sold well.

CHARLES E. BROWN, *Mimico, Ont.*

FROM ONE WHO DID NOT EXHIBIT.

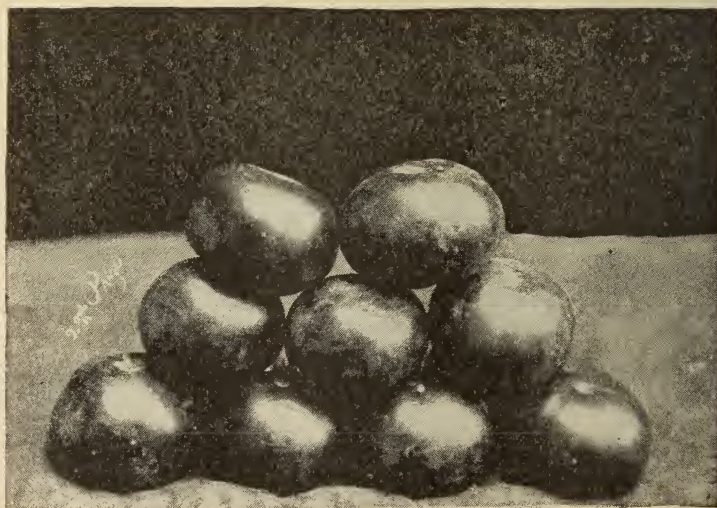
It was very kind of you, indeed, to send us circulars descriptive of your fair, to which we both had fondly hoped to donate our little mite to help to make it interesting, etc. But we were sadly disappointed in not doing so. On inquiry we found

that to send in the number of cabbage required, large heads, too, and the mangels, as we had two that we desired sent, it would cost on express for them alone over nineteen dollars, and we neither of us had that much money in time to send them. Then my tomatoes, grown from your prize seed, also, and Mr. CLAYTON's potatoes, which were fine, we could not send without about as much more expense, so we



Second Prize, Golden Self Blanching Celery, raised by EDWARD GORHAM, Hastings, Mich.

were obliged to give it up. I wished much to send them, especially the mangel wurzels, and had I, I would, no doubt, got the first premium. But all thought I better not try to send as freight. My mangel wurzels beat all, one measured in length twenty and one-half inches, and thirty-five inches in circumference. The other thirty-two inches in length and thirty inches in circumference. Weight, forty and



Second Prize, McCollum's Hybrid Tomato, raised by CHARLES E. BROWN, Mimico, Ont.

one-half pounds and forty-four pounds respectively, and very smooth and shapely. From the packet of seed sowed I have not a dozen under medium size, and over three-fourths of them are nearly as large and fine as the two described. They are the wonder and admiration of all who see them, and my tomatoes, also. I think I never saw their equals in many ways; many of them have been large as tea saucers, and are grand for smoothness, substance, flavor, even ripening and durability, keeping

three weeks splendidly after ripening. They also yield well and are not yet hurt by the frosts, although we've had several severe ones for this coast country, which have cooked the squash vines and blackened the sweet potatoes also.

MRS. J. C. B. CLAYTON, *Arroyo Grande, California.*

FROM THE FIRST PRIZE TAKER OF MELONS.

My Irondequoit melons were raised on light, sandy soil, which before plowing in the spring, received a moderate coating of manure from the stable. The melons were planted on May 23d, and received good ordinary culture during the summer. Early in the season the plants were thinned out to about one in a hill, and the hills were left eight to ten feet apart. To this thorough thinning I largely attribute my success. Another and principal reason of my success lay in the favorable character of the past season. The melon plants came up within a week from planting, and



Third Prize, Golden Self Blanching Celery, raised by M.
WETTERLING, Ionia, Mich.

grew right along all summer without a check from either cold or wet. Still a third cause of my success lay in the quality of the seed. Every seed seemed to grow. The plants pushed with remarkable vigor, and developed leaves almost as big as those of summer squash vines. My main crop of melons got ripe September 1st. On about one-twelfth of an acre I raised two hundred and fifty sizeable melons of which the largest weighed twelve pounds. One single vine produced fourteen marketable melons.

B. F. HOVR,

Manchester, Iowa.

THE SECOND PRIZE MELONS.

I will be glad to state all I know about melon

raising. This far north we cannot have average early crops; for medium and late I plant from the 1st of May to the 15th, in rich sandy loam. When the plants were well up, the past season, I kept them hoed and free from weeds; when the runners started out I gave them the last hoeing and hilling up. As the season was a very dry one I watered them three times a week, but I felt fully repaid with the abundance of large, fine melons. I think the Irondequoit the finest of melons, and believe they would be excellent for the market, as they are large and fine looking.

MRS. J. L. WAGENBACH, *Farmdale, Ill.*

FROM AN ILLINOIS MELON GROWER.

My way of raising melons is first, to secure a good location, one lying to the south and east. I prefer a clover sod, if it is to be had. I plow my ground deep, and mark it eight by eight feet each way, and use well rotted manure, well forked over, in hills. I use Ice Cream or Icing and Vick's Early for early watermelons; for late, Kolb's Gem and Cuban Queen. For late musk melons, treated in the same way, but five by five feet, I plant from May 10th until June, and have had good crops planted the 8th of June. I market my melons in small towns, where I dispose of one to three loads a week. I sell a good many at the patch, some coming twenty

miles and taking them away by wagon loads. I have ripe melons the latter part of July, and some years not until the fore part of August, according to the season.

JOHN T. ORR, *Forrest, Ill.*

USEFUL AND PRETTY ANNUALS.

There are so many beautiful asters, coming in all shades and sizes, that one hardly knows just what varieties in which to indulge. Of course, when one wishes but a few seeds for trial a package of all varieties mixed will often prove a satisfactory solution to the puzzled mind, as it usually contains a few seeds of Quilled,



First Prize. Golden Giant Mangel, raised by
DAVID WILDS, Springfield, Iowa.

Crown, Dwarf Imbricated, Bouquet, Pearl, Harlequin, Mignon, Lemon Gem, the Tall Victoria, Tall Pæony, Chrysanthemum asters, and many other varieties, each style of various shades or colors. Asters bloom rather late in the season, and are valuable on that account, as so many of the early flowers have become exhausted by the time the asters come forth in all their glory. The seeds should be sowed

early, sometime in May will do, and three sowings, about two weeks apart, would be best, in order to have a succession of flowers, bringing the first sowing about the last of April or the first of May and the last sowing about the first of June. The aster likes a very rich and friable soil, and should be transplanted when it has its second leaves to the soil that has been prepared for the plants. Seeds should be planted about an inch deep. The tall growing varieties are the best for cut flowers; the dwarf varieties make the finest edging and border plants. The light varieties should be used in larger quantities than the dark ones. The blossoms last even after our early frosts, and the cool weather in October seems to be a great stimulant to their many beauties, although they are beautiful all through September. During the early summer they should have an occasional pinching back to induce many side branches to grow, which will furnish many blossoms.

There are few finer plants for bedding purposes than the verbena. Small plants already growing may be procured by the dozen for very little outlay, or the seeds may be sown; but the seeds germinate so slowly that it hardly pays to fuss with them. The new mammoth varieties bear very large trusses, and the individual flowers are much larger than the older sorts. Sea Foam is a beautiful white variety. The variety Odorata is of recent origin, and is considered very fine, bearing, as it does, spikes of bloom three inches long, is very fragrant, growing and blooming readily and quickly from seed. The seeds should be soaked over night before sowing, in tepid water.

The schizanthus is not properly appreciated, the foliage is particularly pretty and the flowers resemble little butterflies of many colors, borne in great profusion. They are useful for bedding or as pot plants.

The scabiosa, sometimes called the Pin Cushion flower, and more often the Mourning Bride, is a favorite old-fashioned flower. They offer a great variety in

coloring among other flowers, jet black, black and purple, black tipped with white, maroon, pink, etc. They have long, slender stems and are very useful for cut flowers.

The *Salpiglossis* bears flowers of a marked richness, beautifully and curiously striped or pencilled; they grow about two feet in height. The flowers are petunia-shaped, quite large and of various colors. The seeds may be sown under glass, or in boxes in the house and transplanted, or they may be sown in the open ground if the soil is light.

The *Silene*, or *Catchfly* so called, grows and blossoms freely and is a favorite with many. It produces white, red, pink and rose blossoms in umbels. The plants are covered with a glutinous substance to which flies and other insects stick, hence the name.

And now a word for the lovely *Nasturtium*, which is particularly popular in these days, when every one indulges in yellow as the decorative color. They may spread on the ground, climb trellises, fences and piazzas, festoon your urns and droop from your hanging baskets. They grow so easily and rapidly, blooming so freely that one cannot afford to do without at least one package of *nasturtium* seeds. For setting in the flower beds the dwarf varieties are excellent. *Lady Bird*, a lively, bright yellow, striped with crimson, *Empress of India*, is very dwarf, flowers are of a deep crimson and the foliage is of a purplish tinge. The proper name for *Nasturtium* is *Tropæolum*. One great virtue of this plant is its power to withstand heat, for it thrives and blooms luxuriantly even in the hottest weather.

No annual can excel the *Phlox Drummondii* for a brilliant and continuous display; it is particularly beautiful in masses. The soil does not want to be too rich, nor the plants set too close together, as they might suffer from mildew. The *Phlox* has been so much improved of late years that every shade almost can be found among the plants while the size has also become greatly enlarged in the new large flowering varieties.

The *Centranthus* blooms profusely all through the summer and into late October. The seed should be sown in clumps when the ground is mellow. The flowers are small and borne in good sized

clusters on very light green stems. They are very nice for cutting and require but little care. The color, a dainty, soft pink, is very beautiful; there is also a white variety.

The *Calliopsis* is one of our most satisfactory of annuals for cutting. They make fine bedding plants, and may be had in the tall growing or dwarf varieties. The flowers are very striking and rich, of all shades of yellow, orange and rich reddish brown colorings. They are brilliant and effective when planted in groups. They grow very rapidly after the seeds are planted. They like a rich soil and plenty of sunshine. The plants should not stand nearer than from eight to ten inches apart, and two or three sowings, two or three weeks apart will furnish a succession of bloom.

The *Ten-Weeks Stocks* are among the best of the annuals, with their large spikes of flowers so fragrant and lovely, blooming after nearly all others have succumbed to Jack Frost. Take up the plants in early autumn and put them in flower pots and they will bloom a long time in the house. If transplanted from seed sowing it should be done when seedlings are very small, otherwise the plants will become slender and not flower as satisfactorily. They should not be placed where they get the sun all day, and a daily watering will greatly improve the flowers in size and durability as well as in beauty. The Stock likes a deep, rich soil.

Phacelia congesta furnishes flowers of a lovely shade of blue, the blossoms being cup-shaped. They are very pretty and satisfactory little annuals.

The *Nemophilas* are pretty, dainty, hardy annuals with exquisite cups of white, pale blue and mottled tints, which must be seen to appreciate their loveliness.

The foliage, which is of a delicate pale green, sets off the flowers, or rather blends with them harmoniously. Sow early and transplant, as they do not like the hot sun; they will flower finely all summer if planted in a cool, shady location. Seeds may also be sown in the autumn for spring flowering.

Nolana. Pretty, trailing plants, with small convolvulus-shaped blossoms of blue, white and other colors. They

bloom profusely, and are especially adapted to rockwork, for growing in masses, hanging baskets, pots and vases. Sow very early out of doors.

A beautiful annual is the *Torenia Fourieri*, it has large sky blue flowers, having three large spots of dark purplish blue, and is yellow in the center, resembling somewhat a pansy blossom. Sow in the house, in a warm room, in the spring, transplanting to the open air when it is warm enough. The plants will

bloom constantly all summer until frost, withstanding the sun well; they are well adapted to our hot summers. Give them plenty of moisture.

Viscaria cardinalis makes a very attractive bed with its lovely flowers of the most intense shade of crimson. It is a hardy annual, grows readily from seed, and should be more generally planted. It makes lovely bunches for cut flowers, and blooms freely.

JOYCE RAY.

WINTER WALKS.

Midwinter by the sun's position, but the earth is bare and unfrozen, the air is mild and pleasant. The dead leaf carpet stretches afar through the forest, the little stream descending hundreds of feet in a mile fills the air with its rushing, and there is at times a sound of wind in the tree tops, as if descending from the sky it stirred them for a moment and ascended again. The pale sunlight casts undecided shadows, the dead leaves send a fresh fragrance. All over the hillside evergreen ferns are seen the Shoe Brake, *Aspidium acrostichoides*, named from the resemblance its leaflets bear to a long toed shoe when picked off and turned upside down, the auriculate appendage at the base forming the heel; the Shield Ferns, *Aspidium thelyptera* and *A. marginale*, and most common of all just here, the *A. spinulosum*. Less common the Rock Brake, *Polypodium vulgare*, the Walking Fern, *Camptosorus rhizophyllus*, and the Crested Fern, *Aspidium cristatum*, are to be found here and there. Why, out of all the ferns, should these species be selected to carry their verdure through the winter? The Rock polypod and the Shoe Brake have the look of evergreens, the Walking Ferns, also, are thick and smooth and leathery, but most of the Shield Ferns are thin and finely cut, the *A. spinulosum* especially, and one would expect it to wither in the first frost. But they are prepared for anything in the way of climate. Let tropical species form trunks eighty feet high, the trunks of our evergreen brakes are underground, if anywhere. This point, rising through the dead leaves, from which the verdant fronds radiate, is, perhaps, the summit of a buried tree

fern sunk in the soil as a protection from cold. Here the outcrop of a heavy stratum of sandrock replaces the soil with fragments of stone and few summer fields are greener than these places are with the thick lying fronds of the broad Shield Fern, *A. spinulosum*.

It was a summer afternoon, and nothing particular seemed going on, when I slipped a leaflet of this species into the field of the microscope, and looking through the lenses, I saw the quiet day instantly become a time of intense activity. All up and down the leaflet the sori seemed in process of formation, a ragged cover (indusium) fastened by its middle, lay upon the spore cases, like a paper scantily covering a dozen grains of pop corn, and the new sporangia boiling out of the leaflet kept the older ones and the indusia in a constant agitation. Multiplying the sori on the leaflet by the leaflets of the whole frond, and this by all the fronds in the woods, I saw the declining day was not so idle as it looked at first.

The Walking Fern gets its name from its way of bending the tip of its long, narrow frond to the earth, where it takes root, and thus the plants advance, step by step. No other fern has this habit, though the *Aspidium bulbiferum* has bulblets in its axils, like those of the Tiger Lily. The Rock polypod grows nowhere except on stone. Here in these woods, thick evergreen beds grow on the great square blocks of sandstone, ten feet or more from the ground, with only the accumulated dead leaves, etc., for soil. But the hardy polypod is not the only growth crowning these rocks. The water loving Jewel Weed, or Touch-me-

not, *Impatiens flava*, grows in quantity on some of these flat tops, depending on the rain only. You could roll up the sheet of mold, like a carpet, if you choose, leaving the level stone perfectly clean. In the open field the rock of the outcrop gray and broken, with no soil visible at all, is braided all over with Dewberry vines, still bearing their leaves, scarlet and crimson, purple and green, and there are many Skunk Currant bushes, *Ribes prostratum*, with their large rosy buds, and looking more closely I see on the stone many impressions of a fossil, the *Fucus canda-galli*, Rooster's Tail *Fucus*, from the shape of its branches. These experienced stones, dating from palæ-

zoic time, were found in the midst of beds of the humble *Fucus*, scarcely more highly organized than the confervas (frog spittle), etc., of our streams; perhaps the only green thing they had ever seen, but now, after so many slow ages have crept away, what a wilderness of bloom and beauty every summer sees here. It is scarcely a good garden spot, but a variety of the perfect flowers and fruits of these latter days do not disdain to grow here, whether evolved from the *Fucus* or specially created from time to time, we will not stop now to guess, we at least know the old and somewhat ripened earth is a vast improvement on the new young one. E. S. GILBERT.

CAROLINA WILD FLOWERS.

I.

All through the unfenced mountain lands of the South, lands where every one's herds have "all things in common," go leading narrow, clearly beaten, serpentine paths, where cattle and sheep have found nearest or easiest climbing to water, to rich, sweet beds of under grass, or to the "licklogs," where the herdsmen keep, in deep notches cut in fallen patriarchs, salt and meal for their delectation.

Follow one of these graceful, alluring little paths some spring morning up into the hills, where the air is cool and fresh and sweet, with the herd bells tinkling faintly upon the heights above you, and all the air aquiver with bird songs about you, and your sight and senses quickened by nature's elixir, and you will discover at every curve and turn of the little white beaten path some shy woodland flower, which you may have sought for vainly dozens of times before.

Shortia galacifolia is no longer a rare plant to North Carolina botanists, for here where the Catawba river winds through the mountain region, it is often found. But the *Shortia* is a local plant, and there are only three other places where I know of its having been found—in Oconee county, S. C., by Dr. SHORT, in Kentucky, and here in this region. It was discovered by MICHAUX, in 1788, but remained undescribed and unnamed until, in 1839, Professor GRAY found the remains—the leaves and a single fruit—

of MICHAUX's specimen in an herbarium at Paris, labelled as collected, in the "*Hautes montagnes de Caroline*." He searched for it vainly, but unable to find it anywhere, finally described it from the scanty material on hand, and named it for Dr. SHORT, the famous collector. Eager search among our mountains was made for it, and from new specimens found, Professor GRAY completed his original idea of the character of the plant.

It is a low, perennial herb, and spreads by means of thick, creeping rootstocks; has bright, glossy, persistent leaves, and in March and April bears pretty white or purplish flowers, of a primrose shape. It has found its way into several catalogues of late, but although it is well worthy of cultivation, yet I prefer to keep it as a pleasant surprise for myself and friends during mountain tramps rather than in my wild garden.

Great beds of Wintergreen, covering many yards square, one often comes upon in these mountains, and in the latter part of April or early May, the Wintergreen, *Polygalla paucifolia*, blooms. It has an oddly shaped flower, of a pearly white or purplish color. There are five sepals, the odd one superior, the wings like petals, the stamens grow together into a tube, split on the upper side and united below with the claws of the petals.

The Spotted Wintergreen, *Chimaphila maculata*, is not so retired in its habits nor so gregarious. All along the path

you may find single plantlets or groups of them. It is a near relation to the true Wintergreen or Checkerberry, and is a low perennial herb, with sharply serrate, lanceolate leaves, of a very dark green, persistent, of a thick, leathery texture, the white veins showing broadly in marked variegation upon the upper side.

Its blossoms are rose-white in color, borne two to five on slender peduncles. The setting and shape of petals and stamens reminds you somewhat of a miniature Passion Flower.

The common name for it in this locality is Lion's Tongue.

L. GREENLEE.

EUPHORBIA SPLENDENS.

The Splendid Euphorbia, or, as it is often called, the Crown of Thorns, is an evergreen stove or warm greenhouse plant. The genus is a very remarkable and extensive one, and this species is certainly a very odd plant, and it is one that will always attract considerable attention. It is of sturdy, branching habit,



EUPHORBIA SPLENDENS.

the branches being completely covered with long, stout, sharp thorns, about an inch in length. The leaves are small, ovate in shape, and of a light green color. The flowers, or rather, the floral leaves or bracts, are of a waxy texture, and crimson scarlet color. They are produced in pairs, and at all seasons of the year, or as long as the plant continues in a state of growth.

As a plant for the window garden this Euphorbia is specially valuable, as it will not suffer as severely as most others from the changes in temperature and moisture to which window garden plants are so often subjected. Another excellent point in its favor is its perfect freedom from all insect pests.

To grow this Euphorbia to perfection it should be given a compost consisting of two-thirds turfy loam, one-third well decayed manure or leaf-mold, with a fair sprinkling of sharp sand. In potting use porous, or soft-baked, pots, and let them be proportionate to the size of the plants. See to it that they are well drained.

During the winter season the plants should be given a light, sunny situation, and a temperature of from 55° to 60°. Water should be given as often as necessary, and as soon as the pots become filled with roots give liquid manure once or twice a week.

During the summer season, or from the middle of May until the middle of September, the plants can be kept out in a deep, well enriched border, in a sunny situation. Propagation is effected by cuttings, and if the young plants are liberally treated nice specimens will soon be obtained.

CHAS. E. PARNELL, *Floral Park, N. Y.*

AN AUGUST FLORAL DESIGN.

The quickness and deftness with which a skilled florist will put up a beautiful floral design is marvelous, and the result often enchanting, although sometimes, I must confess, quite the reverse. I recently had occasion to wait a little while in a Boston flower store, and while there saw three beautiful designs grow from the skeleton wire frame to perfect and finished objects of grace, beauty and

purity. The first was a table decoration. The foundation was a double wire frame about two inches high and sixteen inches in outside diameter. The main diameter was about eight inches, making a circle for the reception of moss four inches wide and two deep. This was stuffed with moss, and the design commenced by inserting on the lower edge a circle of fern leaves. There were the tips of the

larger ferns found growing wild, and a length of about eight inches was used. The lower portion of a frond was stripped so as to leave about six inches remaining, or three or four pair of leaflets. The bare stem was cut off so as to leave only about two inches of it, and then deftly stuck into the foundation. This was done almost as rapidly as cards are dealt by a skilled player. The young man held a sharp knife in his right hand, and taking a leaf in his left, he stripped away the superfluous portion, and cut the stem with a long slant, and then inserted the stem in the moss with his left hand, catching up another leaf on

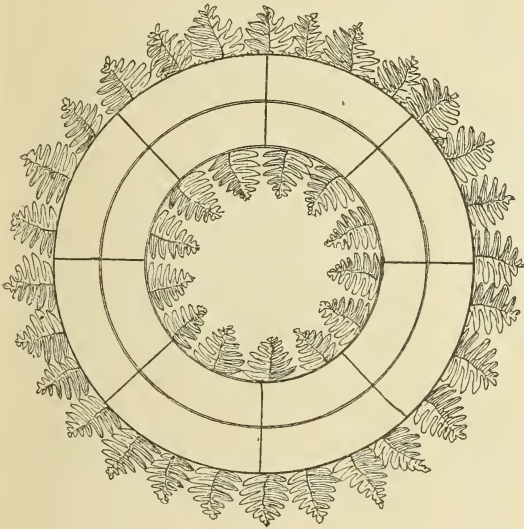
Japan lilies, with long stems so that they stood up about two inches above the Asters. There were seven or eight of the lilies which were of the roseum type, but white, and not the longiflorum. Outside the lilies and among them, but not in regular order, and avoiding all appearance of crowding, were white rose buds with long stems and a trifle of rose foliage (the foliage being wired to the stem so that it set right down between the asters), and Freesia compacta blossoms.

Inside the row of lilies were rose buds and white sweet peas, and interspersed through the whole were sprays of Maidenhair fern, furnishing the green and giving an airy grace and beauty that must be seen if one would appreciate the effect.

In another design, also circular, but designed for placing on a coffin, and smaller, the frame not being more than ten inches across, the flowers used were asters, Japan lilies, sprays of newly opened white hydrangea, rose buds, gladiolus blooms and carnations, all white, of course. All the flowers were closer down to the foundation in this case than in the other, the height of this being about six inches to the top of the spray, while in the table design it was nine or ten.

A third design was also funereal, being a cross two feet long and elevated at the upper end about six inches from the horizontal. It was medium between the other two in compactness, but the same varieties of flowers were used. In making this the border of fern leaves was put in last, and these were inserted in an upward direction, so the tips slanted down to the table and hid the standard that supported the cross.

I have been thus particular in describing these designs because so many ladies and flower lovers look upon the making of floral designs as something beyond the capacity of the average flower grower, while the fact is there are thousands of people with sufficient taste in color and arrangement to get up very creditable specimens, if they only knew how. In the designs mentioned, with the excep-



the return trip and slightly turning the frame, which rested on short wire legs, at the same time. He then inserted some smaller pieces on the inside of the ring, and three or four sprays of Maidenhair fern, also. These were not laid so flat as the outside course, but were put in at an angle of, perhaps, thirty degrees. A representation is presented of the way the design looked at this period of its construction, showing the wire frame and its border of green.

The top of the frame was then covered scattering with white German asters, and a row was stuck in more closely around the outer edge or above the fern leaves. Above this row, and next to the inner circle, were placed short sprays of Maidenhair fern. Along the middle of the flat surface the florist inserted at equal distances white

tion of the freesia, the flowers are such as any lady can easily grow, while there are several varieties of white flowers equally desirable and easily grown that were not used in this case, among them being white abutilons, white begonias and single and double tuberose.

In using the abutilon the flower is opened back and deprived of the central or reproductive portion, and makes a good background for choicer flowers. Perhaps my readers have perceived that covering the foundation with coarse white flowers, like asters or hardy hydrangea, to be afterward mostly hidden by choicer flowers and Maidenhair trimming saves the choicer flowers and makes the design equally beautiful but much cheaper.

Roses with long stems, lilies and fern leaves are inserted in the moss without much difficulty, but tuberose, carnations and most flowers for floral designs must be stemmed, as it is called, for this operation. The natural stems are left about an inch long, and the flower held between the left forefinger and thumb, a bit of cotton is placed against the end of the stem, and a common wooden toothpick laid along side of it; then a fine wire is twirled around it and it is ready to insert in the moss, the point of the toothpick penetrating the moss, while the cotton with the flower stem resting upon it absorbs moisture and obtains a longer lease of freshness.

The moss used is sphagnum, which

grows in many swamps in the timbered States. Where it does not grow it can be obtained cheaply of wholesale florists in the larger towns, as can the wire frames, stemming wire and toothpicks. In rural towns, remote from cities, it is often difficult to obtain floral work without more expense than can be afforded. It is in such regions, especially at funerals, that miserable and unsightly makeshifts are used.

The most common way is to cut a circle of pasteboard, sew on a foundation of arbor vitæ leaves, and then sew on the flowers. The making of these designs, which are the result of entire absence of proper materials, often falls to the same individuals, sometimes for years. If such persons would invest a little in wire designs, sphagnum and wire, they could, with a little practice, get up quite creditable work, and if they got no money return would, at least, get something in the way of appreciation and gratitude.

The late summer and autumn months give abundant and beautiful material for table and parlor decoration, where all colors are admirable, and the art can be learned by using goldenrod, scullcap, wild asters, milkweed, eupatorium and other wild flowers, with wild ferns and asparagus for green.

Of the cultivated flowers in nearly every collection double hollyhock, double white petunias and fuchsias can be tried in addition to kinds already mentioned.

L. B. PIERCE.

LILIAM EXCELSUM.

Why is it we hear so little in praise of *Lilium excelsum*. *Lilium auratum* is raved over as the grandest lily for summer flowering and, indeed, too much cannot be said of its beauty. *Harrisii* is extolled to the skies as a pot plant and winter bloomer, and beautiful indeed it is. The praises of *Candidum* are sung by all, and I join in the refrain.

But for beauty, fragrance, and general satisfaction give me *Excelsum*. Not that I admire bright-colored flowers more than white for, on the whole, I prefer white blossoms, but *Excelsum* is so delicate in its coloring and so rare that it cannot but excite admiration and pleasure, while its exquisite fragrance intoxicates the sense;

and its sure blooming qualities must cause the gratification of the amateur. It has one greivous fault. It does not increase rapidly, like some other varieties.

I do not know whether it would do for forcing or not, but think not, as it matures too slowly; but it does fairly when pot grown if plenty of room be given it. I have grown mine in a two and a half gallon oaken paint-keg; so one may grow this most beauteous lily even though not owning a square rod of mother earth. Required only a pot full of rich soil and a yearly top dressing of compost and fresh soil, and no disturbing of the bulb itself. I potted mine in good rich sandy soil mixed with leaf mold and well-rotted cow

chips. Drainage was secured by having holes in the paint-keg at the bottom and placing in, as a first layer, an inch or so of charcoal, rather fine. I have wintered my lilies successfully in pit, cellar and trench. Think they did best in cellar, although I believe a pit would be the best place if properly constructed. I have tried Auratum, Speciosum, Roseum or Rubrum, and Album, Double Tiger, Candidum, Harrisii and others, but none have given me such entire satisfaction as Excelsum. It is sure to bloom if given half a chance. As I said, however, it has the fault of not increasing rapidly. I had one bulb to start with and I have one bulb now and two or three little bulblets. On this account I presume Excelsum will never become very common or low priced;

yet the price it sells for is not great compared with many other flowers; and then it is more satisfactory to pay the price asked for Excelsum and have it bloom every year than pay half as much for some other kind, and have it fail every year or two.

My Excelsum has never produced but three lilies at a blooming, although it sends up a strong, tall flower stalk, and as I never saw it in bloom or in cultivation anywhere else, I do not know if it is specially floriferous or not. But the three lilies more than repay me for its cultivation, for they remain in perfection a long time. They are not fleeting in beauty like the rose, and for this very reason I would choose the lily for my queen of flowers.

A. C. F.

VALUE OF CATALPA TREES.

As shade trees they are especially desirable about the home lot. They are of rapid growth, and are easily grown from the seed; their broad leaves while adding much to their beauty are better adapted for shading than those of many other trees; their flowers while in season are both pretty and fragrant; the trees will bear "cutting in" better than most others, and can be pruned even to the trunks every season if desirable, and will but throw out the better growth, their vigor is so great. Freshly pruned, they present, the first season, quite a unique appearance with great clusters of tropical-like leaves that soon develop into branches.

Every farmer knows, who has raised the trees, that they make the best fence posts, and that a fence thus provided will out-

last three others, the wood is so indestructible. Branches trimmed from the main stem and used as props for Lima Beans in the garden have been in use many years and are as good as ever. It is said to be the firmest and best wood for the use of railroad ties and for whatever use an indestructible wood is needed.

Why then should we not grow more Catalpa trees? They are good shade trees for the street, invaluable at home for the same purpose, while as ornamental trees they have always won favor. I never look at the great trunk of some old Catalpa tree, but I think of the boon it will some day be to the economical fence maker—that is if fences are in vogue in the future.

H. K.

LOOK FOR THE LIGHT.

"It is worth a thousand pounds a year to have the habit of looking on the bright side of things."

DR. JOHNSON.

Yea, worth not a thousand only,
But ten thousand rather, I say;
Each cloud has a silver lining,
Though beneath all is somber and gray;
Leave the valley so darksome and dreary
And stand on the hilltop some day.

One comes in time to be able,
Through the habit of many years,

To find in life joy or sorrow,
To glean from it hopes or fears;
For what we expect and look for—
'Tis strange, but true—appears.

Let us, then, in faith, hereafter
Seek the side more blest and bright,
Assured that no lot, how cheerless,
Is devoid of comfort quite;
As science declares, light lingers
Diffused through the darkest night.

PHILIP BURROUGHS STRONG.



FOREIGN NOTES.

LYCASTE SKINNERI.

It is scarcely necessary that anything be said in recommendation of this species. Few who have any acquaintance with orchids generally would not include it amongst the twelve best. The large size of its flowers together with the number produced place it in the first rank of useful orchids. I have counted seventeen old flower stems clustered round the base of an old imported pseudo-bulb, and I have myself had as many as fifteen from a single pseudo-bulb in one season. In color and local marking it is one of the most variable of all orchids; even in plants of the same importation points of difference may be found in almost every one. The pseudo-bulbs are three inches to five inches high and the leaves deep green, broadly lance-shaped, and of large size. The flowers are usually about five inches in diameter, but in well grown and exceptionally fine varieties they sometimes measure six and one-half inches across. In the typical form the sepals are blush-white, the petals deep rose, and the lip white spotted with crimson. Where a few plants are grown they may be had in flower from the present time up to May.

W. J. B., in *The Garden*.

WEeping TREES.

Weeping trees embrace the most charming examples of ornamental trees. Graceful in outline, elegant in growth, impressive and attractive in appearance, they possess all those characteristics which render them especially valuable for the embellishment of landscape, park and lawn. This peculiarity of form among weeping trees is a precious one, inasmuch as the contrast between the rigid upper portion of the tree and the pendulous outer and lower parts forms a very striking and attractive feature, quite distinct from the aspects usually presented by other trees. But for all this they require to be employed discreetly, or the good effect which they are capable of producing is destroyed. They should be planted sparingly and not near one another, and carefully selected and suit-

able sites must be chosen for them, or half their charms will be lost; when met at every turn or too often repeated their interest and attraction are greatly diminished. They should never form large groups or masses, nor be mixed up with other trees in belts or borders. In the hands of a skillful planter they are capable of producing the most charming results, and are more effective in giving character and expression to a landscape than any other trees. Some of the weeping trees, however, with which we are familiar are truly formal and artificial, and should be sparingly introduced—in some instances not at all, and nothing but a vitiated taste would sanction their use in well kept places. The main fault with most of these trees is that the branches all droop from a given point; whereas, in such trees as the old weeping willow the falling tresses of sprays are broken and diversified, like water in a mountain cascade. Their only position seems to be in association with architectural terraces, statuary, fountains, etc., for a tree with its branches all growing downwards is just about as natural as jets of water thrown upwards.

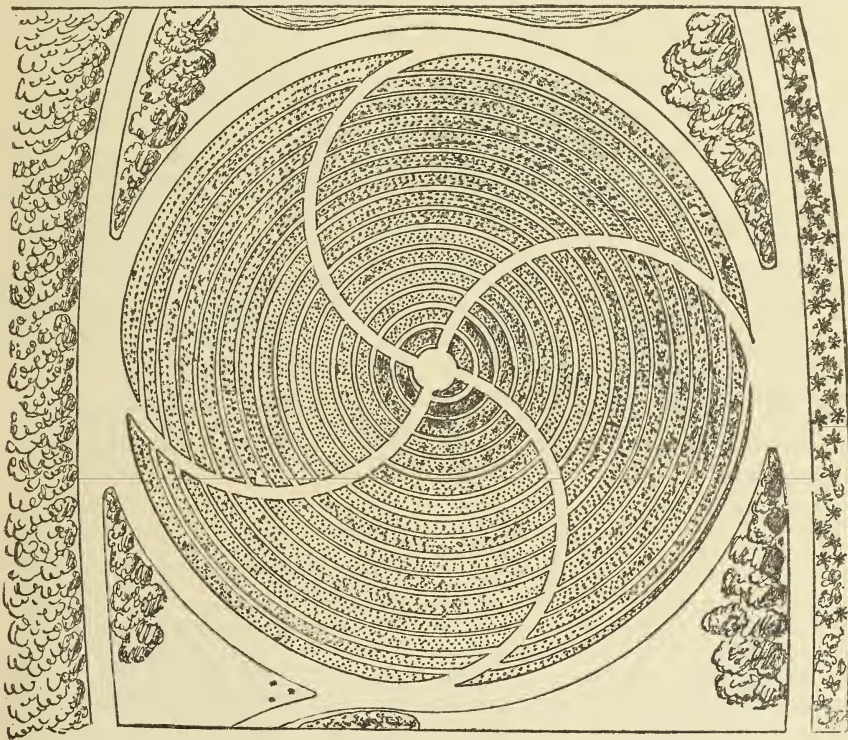
X., in *The Garden*.

A MODEL ROSERY.

A writer in the *Revue Horticole*, a short time since, gave an account and an illustration of a rosery planted in the Royal Park of Laeken, Belgium. The latter is here reproduced with translations of portions of the article. A large rosery, including all the varieties of hardy roses, would be a grand attraction at the Columbian Exposition during the month of June, and particularly instructive in August and September in showing the best varieties of late bloomers. To what extent can the form of rosery here presented be adopted, or can it be modified and improved? To produce such a plantation at Chicago, for the season of 1893, it would be necessary to plant it the coming spring. The plants would then have time to acquire the necessary strength to give a fine amount of bloom the second

year. There would be time and opportunity also to display the features of different kinds of pruning. It would be a horticultural object lesson for the nation in rose-growing. Of course, a number of plants of each variety should be employed, and the variety should be as great as possible. Stock grown in this country is preferable, and from the different nurseries a collection comprising most of the desirable kinds can be procured. What, however, might be lacking could be got out from Europe early in spring. To make such a display would require that the matter be taken in hand at this time and without delay. But a large rosery would be a most desirable feature in every large park, and if well and properly cared for would always be popular. The following are some of the writer's statements:

First, what is a rosery? Any space whatever containing a collection of roses, of which the arrangement permits a special study of them, is so called. A rosery is a



ROSEY IN THE ROYAL PARK OF LAEKEN, BELGIUM.

sort of school, where one learns to distinguish, to judge. Now, in order to merit this name, a school requires the plants that compose it to be placed in a certain manner, which permits them to be easily seen in order to be able to study them, and which facilitates the operations which their culture or health requires.

The writer then inquires if the rosaries usually seen fulfill these conditions, and concludes that they do not. He says, further: If, by chance, some of them combine some of these advantages, it is generally under defective conditions, where the plants are disposed in straight borders separated by a little path. In this case there is nothing agreeable or ornamental in the view, because the mass does not harmonize with the surroundings.

Often, in order to remedy the defects noticed, rosaries are formed in circular or oval masses, but then it is necessary to restrict the surface of these masses to a small space, otherwise one could not see the flowers at the center, or, at least, could not see them well. In all cases it is nearly impossible to gather the flowers from the interior plants, or, at least, it is difficult to enter among the plants.

The writer then states that after considering the difficulties and requirements of the case, he undertook, in establishing this rosery in the Royal Park, to avoid the usual inconveniences, and, on the contrary, to combine all the advantages which a rosery should have. The circumstances and the exceptional conditions in which he was placed, the writer says, allowed him to proceed on a large scale. But as it was desirable that the rosery might be examined at a near view, and also look well at a distance, and even outside of the park, all these circumstances had to be considered. The diameter of this rosery is 426 feet (130 mètres); surface measurement about three and one-half acres, forming, not comprising the circle at the center, sixteen circular beds or borders 10 feet (3 mètres) in width, separated by a forty inch (1 mètre) path.

The number of roses planted exceeds 13,000, placed in three ranks in each border, and forty inches (1 mètre) apart. Along the edge of each bed are different kinds of ornamental plants whose continuous blooms give agreeable contrasts.

It is not held that the exact distances for planting adopted in this case are absolutely the best, and these, as well as other details, can be modified as maybe thought proper while the general form is retained.

In regard to the setting of the different varieties there is nothing rigidly fixed. It should be methodical, that is by heights, placing the strongest growers in the middle of each bed, and disposing of the different colors so as to vary the colors and produce harmony of contrasts. It will be noticed that there are four cross alleys from circumference to center, which allow easy ingress and egress to and from any part of the plantation. Groups and belts of shrubs and evergreen trees have been planted in such a manner as to shelter the rosery to some extent.

SPECIES AND VARIETIES.

Some very instructive statements are made on the characters of varieties produced by cross-breeding of species in an article by C. WOLLEY DOD, in the *Gardeners' Chronicle*. Varieties of some kinds of plants thus produced simulate the characteristics to some extent of various species, one plant often combining the traits of two or more species so as to

destroy the lines of specific demarkation. Here are portions of the article:

Where many plants are grown together and allowed to ripen seed, crosses are sure to be produced to some extent between kindred species which flower simultaneously. It is important, but not always easy, for the cultivator to distinguish between flowers which vary from the type, because of the inherent power of variation in the species, and those which are the result of a cross between two plants, which themselves continue, through many generations of seed, constant to the form in which they were introduced into the garden.

The theory of evolution teaches that species are merely transient phases in a long concurrent series. In some cases we find most of the intermediate links of a series still existing in nature. This happens where the area of development of a type is large and continuous, as in the asters and sunflowers of North America. In other cases, where the areas of development have been small and isolated, we are more likely to find what a botanist calls good species, because the intermediate links are wanting. But a garden will often supply these missing links between species, perhaps from crossing, perhaps from spontaneous assimilation of the plants under similar conditions of soil and climate. For instance, in cultivation after two or three generations from seed, the distinction between *Veronica spicata* and *V. longifolia* is lost. So it is between *Campanula rotundifolia* and *C. rhomboidalis*, and between *C. carpatica* and *C. turbinata*, though perhaps the last named has hardly reached the phase of a good species.

* * * * *

Dianthus plumarius, *D. petreus*, *D. fragrans* and probably *D. cæsius* mix together in cultivation, and produce an abundant crop of mongrels, in which distinctions of species are lost.

* * * * *

The last genus I shall mention is *Veronica*. Some of the species of this begin at once to vary from seed in cultivation, and go on doing so, until distinctions of species disappear, and plants are produced which botanists cannot name. The species called *V. Teucrium*, as well as *V. spicata*, produces endless varieties, merging the one into *V. prostrata*, the other in *V. longifolia*, though I cannot say for certain that I have seen a cross between the class of *V. spicata* producing terminal, and *V. Teucrium*, producing only axillary spikes of flowers. The inherent power of variation in *Veronica* would indicate it as a subject for the florists' attention, if the result would be likely to prove attractive.

FREESIAS FROM SEED.

It may not be generally known that these beautiful fragrant flowering plants may be grown to as great a perfection in six months from seed as from bulbs; in fact, sowing the seed is to be preferred. The seed should be sown any time during March, or April, or May in a pan or box, employing a light rich compost and good drainage, the latter a very important point in raising them. The pan or box should be placed in a pit which has a temperature of about 60° to 65°, and in about fifteen days germination will have

taken place, and will be indicated by the appearance of the grass-like shoots. As soon as large enough to handle, the seedlings should be pricked off into pans or into pots, 60s, an inch or two apart, and put back into the pit; and as soon as they have made a good number of roots they should be finally shifted into 48s, and placed in the same pit until they have recovered from the disturbance, after which they should be transferred to a cool frame, and after they are sufficiently hardened, put under the protection of a wall, or, if need be, in the open air. Here the plants should be watered regularly, a little manure water being afforded them occasionally. When the weather becomes cold the pots should be transferred to a cold pit or greenhouse, and brought into flower in succession as may be desired.

W. A. C., in *Gardeners' Chronicle*.

OWLS, THE FARMERS' FRIENDS.

From an interesting article on the relation of birds to agriculture and horticulture, in the *Gardeners' Chronicle*, we quote the following:

"In many instances the economy of birds in relation to agriculture is difficult to determine, but no such difficulty exists with regard to owls. Procuring their prey at twilight and dusk, they have but few hours wherein to hunt. This being so, they are in the habit of swallowing their food whole. Now the indigestible portions—bones, fur, feathers—are ejected in the form of pellets, and by a careful analysis of these we get an infallible return of what the bird has fed upon. Of these the writer has examined hundreds—I might almost say thousands—and always with the same result: rats, mice, voles, shrews, beetles, and occasionally birds. I once found no less than seventeen recently killed short-tailed field mice on the side of a barn-owl's nest containing five young ones. The time was a warm evening in June, and the parent birds had only been hunting about an hour."

The writer mentions that WATERTON established nesting places for owls, and directed the overseer of his place to protect them. He carefully observed the birds and noted their habits, and tested their speed in going away and coming, as they brought mice to their nests, and says that, upon one occasion he saw a

barn owl drop into the water and rise up with a fish in its talons. Discussing the bird in its relation to agricultural economy, he has the following note: "When it has young, it will bring a mouse to its nest every twelve or fifteen minutes. But in order to have a proper idea of the enormous quantity of mice which this bird destroys, we must examine the pellets which it ejects from its stomach in the place of its retreat. Every pellet contains from four to seven skeletons of mice. In sixteen months from the time that the apartment of the old owl on the old gateway was cleaned out, there has been a deposit of about a bushel of pellets. The barn owl sometimes carries off rats. One evening I was sitting under a shed, and killed a very large rat as it was coming out of a hole, about ten yards from where I was watching it. I did not go to take it up, hoping to get another shot. As it lay there, a barn owl pounced upon it and flew away with it." Finally, WATERTON considers that he was amply repaid for the pains he took to protect and encourage the barn owl; and that it paid him a hundred-fold by the enormous quantity of mice which it destroyed during the year.

The present writer can quite confirm a portion of the latter statement from personal observation. Once, whilst spending my summer vacation at a lonely farmhouse among the hills, I remember going out with a man servant to shoot owls. Young as I was I pleaded long and earnestly that they might be spared, urging that if now and again they took a young pigeon, they did infinite good as a "set off" by the quantity of vermin they destroyed. The fellow would not be moved by my entreaties, however, as he knew perfectly well that the pair of owls that had their nest upon the beam in the barn had eaten his young pigeons. After lying for some time under a sycamore at the top of the fold, an owl skimmed silently over the trees and entered the pigeon-cote. Soon it emerged with its prey in its claws. "There," said the man, "caught in the act!" And so it was—of killing one of the largest rats I ever saw; for the stupid rustic fired and killed it, and this rodent dropped from its claw. Rats were the authors of the mischief, which, if allowed, the owls would certainly have exterminated.

PLEASANT GOSSIP.

FOUL CLOVER SEED.

Plantain in clover fields is complained of by some of the Maine farmers, and in the Annual Report of the Maine State College Agricultural Experiment Station for 1889, Part 3, just issued, this weed and its seeds are described. The writer at the station says:

Attention is especially directed to this weed, as it is being introduced into the State in clover seed. Complaints have been received of fields overrun with it, that were seeded to clover. The seeds of the plantain being smaller and duller colored are liable to escape notice, being hidden by the bright yellow color of the clover seed. Great care should be exercised by farmers in purchasing clover seed, so as not to introduce this detestable weed. We hear complaints of its occurrence in other States. Being a perennial it is a hard weed to exterminate. It is hardy and will cover the ground with a mat of leaves. Cultivation in a hoed crop would be the best way to control it.

A little packet of seed has been sent out by the Station with each copy of the Report so that the appearance of the plantain or Rib Grass seed may be learned. This is all very well, and how much trouble would be saved if farmers and gardeners would take more pains to ascertain the quality of the seeds they purchase, and demand and take only clean, pure seeds of the best varieties. But the fact is, and experiment stations may as well take it into account, that at least ninety out of a hundred purchasers will buy inferior seed because it can be bought cheaper—not that they absolutely know the seed is inferior—but the price is the governing quantity in their calculations, and the quality is of secondary consideration. Of course they pay dearly for it in the end. The same trouble is constantly occurring in grass seed used for lawns, and, in fact, it accompanies all seeds. Good, pure seed costs more than foul and impure seed, and in the wholesale trade the distinction is always made. The reliable retail seedsman, however, always has this poor seed to contend against in his trade, and always will have as long as purchasers are more anxious to save a little in buying than to pay a fair price for a good article.

PRUNING BLACK CURRANTS.

The following well stated directions for pruning Black currant bushes is from the *Journal of Horticulture*:

In this operation it must always be borne in mind that the Black currant fruits best on wood of the previous summer; it is therefore best to encourage a free growth by cutting out the old wood after it has borne for two or three seasons, and training young branches up in its place. To secure this end it is not advisable to grow Black currants on short stems, as is often done with Red currants, as they are all the better if they throw up strong young shoots from the roots occasionally. In pruning young plants raised from cuttings they should be cut back until five or six good strong shoots are obtained to form a tree. These should then be left full length, and any small shoots cut back to one bud. After this all shoots that cross others may be cut out yearly, and the weakest shoots cut close so as to obtain a nice even shaped tree, with an open center like a teacup. All branches that droop down lower than eighteen inches from the ground should be cut off, as fruit that gets splashed with dirt is of no use in the market, and only fit for wine making. All old wood that is becoming weak should be cut out, and if a plantation begins to fail from old age it may be cut down to the ground and given a heavy dressing of manure. One year's crop will thus be quite lost and part of another, but the fruit will be much larger afterwards on the young shoots which spring up abundantly from the old roots. After pruning is over the ground between Black currants should always be forked over, putting manure on first if the ground is poor.

FLORAL NOTES.

J. F. D. asks about Mrs. Alpheus Hardy chrysanthemum in the December MAGAZINE. With me the plant has proved more unsatisfactory in every respect than any other new plant I ever tried. A sickly growth and blighted flower buds are all that I have ever obtained from it in the way of results. The original plants may have been fully as vigorous and healthy as most chrysanthemums usually are and I think it very likely their progeny may develop those traits which are now lacking in them.

The most probable trouble with this variety is that it has been propagated over and over from weakly, immature growths made entirely under glass. It was so extensively advertised and lauded in the most fulsome terms that, to supply the demand created for it by these methods,

the young stock was forced by every means known to the propagators, into giving more slips for more plants to be propagated from; and so on *ad libitum*. The late Peter Henderson always maintained that any plant subjected to such treatment would inevitably be weakened and made unhealthy by it; and he furthermore in confirmation gave instances where to his own knowledge such results ensued. (See *Practical Floriculture*, chap. 48.) A season or two more may suffice to show the plant in a better light, otherwise it will have to be relegated to the list for professionals only.

Mr. Mack's experience with hybrid perpetual roses the past summer and fall was also mine. Not a tea rose in my collection, (with the exception of Sombreuil, which did wonderfully well), bloomed as often or as plentifully as the hybrid perpetuals. But after they had succumbed to the frosty nights of late October, there still remained one bush unharmed. It is a seedling of unknown parentage, which I raised two years ago last spring. It blooms exactly as a tea rose does,—on the tips of the present year's shoots—and then again on the branches successively put forth by these. In growth it is vigorous, upright and branching, with light green foliage and wood, with a few scattered thorns. The flowers are very large and double, clear rose in color, much resembling Antoine Mouton. The last blossom remained perfect until December 4th, and then a sudden drop to near zero finished it and some partially blown buds still remaining. Owing to the peculiar season, I am not prepared to say that these good points are fixed characteristics of this rose; last year (1889) was its first season to bloom and then it did not seem to differ particularly from other varieties. If it proves thoroughly hardy and stands another season's test as well as it has the one just past, I shall feel assured that I have an acquisition very much superior to any other rose in my collection.

While dwelling on the subject of roses it may not be amiss to treat of the means necessary for keeping them over winter out of doors, here in Central Illinois. Many plans have been mentioned in these columns, but after a thorough trial of them all, I have found the simplest way to be as follows: where evergreen branches,

preferably Norway spruce, can be had, there is nothing better. It is only necessary to bend the rose bushes to the ground and cover with the branches to a depth of a foot or more. Often after bushes are covered in the fall, with substances liable to decay, there may come warm weather which will prove injurious to them, owing to the fermentation excited in the material with which they are covered. With the spruce branches this trouble will not arise, and being always loose the plants do not suffer from mildew or decay as with straw or other close protection. If evergreen branches are not at hand, brush of any sort may be substituted, with nearly as good results, only it is essential that sufficient straw or leaves be put over it to keep off sun and winds.

Roses and other half hardy plants suffer here in winter more from the sun and extremes of thawing and freezing than from severe cold. On the stone basement wall of our residence an English ivy has grown luxuriantly for four summers, living through the winter entirely unprotected; but then it is on the north side of the house and gets no sun until spring; in any other situation the ivy is invariably browned and frozen. Wall-flowers, daisies, pansies and all similar evergreen plants need just the same winter protection as that just given for tender roses. Hybrid perpetuals require nothing more than a little coarse manure about the roots.

P. W. A., *Arcola, Ill.*

CABBAGE.

In growing cabbage, whether for early, midsummer, or winter, there are three requirements necessary to success: good, healthy plants, a suitable soil, and last but not least, good cultivation. Our early cabbage is sown in hotbeds about the middle of February; the young plants are aired frequently, transplanted when small, and exposed to the cold as they grow older so as to ensure good, stocky, well hardened plants. The second crop we sow in cold frames the last of March, sparingly to avoid transplanting; and for winter use about the 20th of April. The varieties we use are Early Jersey Wakefield for first crop, Vick's All Seasons for second and third crops. The All Seasons stands number one, in our estimation, notwithstanding the many excellent kinds

mentioned in catalogues ; it is large, firm, sure to head and in fact reliable in all respects.

Early cabbages require a very rich soil while late ones will do well wherever a good crop of corn can be raised ; we plow our ground early for late crop, summer fallowing as for wheat. Early crop is set about 10th of April, second crop the first of May, and third crop 20th of June.

In setting we use a peg to make the hole and insert the plants to the first leaves, pressing the dirt firmly to the bottom of the roots with the peg. When the plants have straightened up commence cultivating the soil deeply, and the more frequently the better, for the first four weeks ; never cultivate less than once a week until beginning to head.

The early cabbages which cannot be disposed of in our home market are shipped in crates ; the late, shipped in car-load lots.

DAVIS BROTHERS, *Jackson, Mich.*

GREENHOUSE HEATING.

I read with interest Mr. REXFORD's chapter on Greenhouse heating (page 381, vol. 13), but I hope Mr. REXFORD will pardon a suggestion in reference to his statement that heat from hot water pipes is milder and moister than that from steam. There is no moisture in any method of heating unless that moisture is applied externally. However this is not what I intended to write about. I want to give the readers of the MAGAZINE a few lines setting forth my experience in hot water heating, by which perhaps they may save a few dollars, should they have occasion to use that method.

Most readers of this MAGAZINE will probably remember my essay on greenhouse heating in the September number, 1884. The greenhouse there described is heated by a brick flue. Outside of the house is a pit with hot-bed sash running parallel with it and its entire length (55 ft.). Between pit and greenhouse runs a walk six feet wide. I conceived the idea of heating the pit with the same fire that the greenhouse was heated with, and naturally hit upon hot water. In looking over a catalogue of Hitchings & Co., I saw the cut of a little saddle boiler which I thought would be "just the thing." The grate of my fire was 17x24 inches ; the boiler in

question 18x24. By making a little alteration with my furnace I could put this boiler over it and use the brick flues the same as before. The boiler was procured, and when it arrived and I lifted up the little thing, I felt just a little skeptical about it, for, to judge by appearance, about a gallon of water would fill it. It was put in place. Three strings of 1¼ inch wrought iron pipe were put in the pit and connected with the boiler. A fire was made under it and— *it did not work* ; that is, it worked too well as far as the boiler was concerned. Very little fire would set it roaring, but I found I dared not make a fire large enough to heat the flues or the water would boil away in no time and ruin the boiler. It was evident the fire was too large for the amount of water. Hitchings & Co. were at once appealed to to send along 100 feet of 4 inch pipe and an expansion tank. These were put under the front bench of the greenhouse, and henceforth my little boiler worked all right. But even then I had to be careful not to make the fire too hot or the water would boil out of the expansion tank and scald some of the plants near it. I estimated that I could have added 500 feet more of 4 inch pipe and heat the water with ease.

Moral: Why pay one hundred dollars, or even seventy-five or fifty dollars, for a boiler, when a ten dollar one will do the work? The size of the boiler has nothing to do with its heating capacity, it all depends on the size of the fire. There is nothing gained by a small furnace ; a tolerably large fire will require less attention and not burn more coal in the end.

CHAS. EVERDING, *Branford, Conn*

CHRYSAETH, ALPHEUS HARDY.

In the spring of 1889 I bought Chrysanthemum Mrs. Alpheus Hardy. Having paid one dollar for the plant, I am afraid I looked at it with regret that season. The plant was small but in good order when received. It made but poor growth and had neither buds nor flowers. It was placed in the cellar when the other plants went to their winter quarters. In the spring of 1890, after vainly trying during March and April to get either root sprouts or cuttings to grow, I turned the old root into the ground. This was late in May. It seemed then to become more contented with its surroundings. In August I lifted

it and placed it in a nine inch pot, and then plunged the pot in a rather sheltered position. Having made so many experiments with it I had only one stalk left. In late September it began to form buds. On November 17th the flowers were full open and now, December 10th, seem almost as fine as ever. If I. F. D. will make a trial of the plant for another season I think it will give satisfaction. But at the same time let Chrysanthemum Lillian B. Bard be tried. This is a free grower and does not require so much petting.

AUNT SUSIE, *Georgetown, Pa.*

CHRYSANTH.

A writer in the *American Florist* proposes the use of the word chrysanth for the common English form of the many syllabled compound Greek word chrysanthemum, the accent to be on the first syllable, thus, chrys'anth. The suggestion is a good one, and we advise our readers to support it and use it in ordinary conversation and writing. Of course the original word in full would be employed in botanical phraseology. This word of two syllables will be of easy pronunciation and carry the full meaning of the words from which it is derived. The terminal syllable is significant only grammatically even in the scientific form, and the use of it as an abbreviation, as it has been, both in England and in this country to some extent, can be considered only as slang. Let it be chrysanth. The French shorten the word to chrysanthème, but chrysanth is both short and euphonious, and at the same time has all the significance of the long form.

PRIZE CABBAGES.

After the article on "Prize Vegetables" in this number was in type we received from Davis Brothers of Jackson, Michigan, who took the first prize for cabbages, the description of their method of cabbage growing, which appears in this department. Their accompanying letter gave an apology of sickness for the delay in writing, and this explains why their communication is not placed with the others.

A BEAUTIFUL FORGET-ME-NOT.

The colored plate of the new variety of Forget-me-not, Victoria, in the present number tells almost its whole story. The

plant and flowers are shown about natural size. As may be seen it is dwarf and of compact habit, and produces its flowers in great profusion. A considerable number of the flowers are double, as may be noticed, and this is a distinctive mark of this variety, which is a strain of the alpestris species. The plants can be raised from seed which is grown with great care to preserve it pure and to retain its peculiar qualities. They will do well in suitable localities in the open ground, but it is especially desirable for pot culture; for this purpose it is the finest of all the forms of *Myosotis*.

A GREAT CHERRY TREE.

A paper was read before the recent convention of fruitgrowers at Santa Cruz, by R. Hector of Placer County, California, in which he stated that his famous Black Tartarian cherry tree had during the past five years brought him a gross return of \$1,800. Last year it produced 300 ten pound boxes. The average return during the last five years has been \$1.50 a box. The tree is now 35 years old and 60 feet high. The trunk, six feet above the ground, measures over ten feet around, or more than three feet through. This is probably the largest and most valuable cherry tree in the world.

APPLE BLOSSOMS IN WINTER.

Perhaps everyone does not know how easily can be had fresh apple blossoms in winter. Get the ends of branches with plump flower buds and place them in water in a warm, sunny window, and they will soon bloom. No doubt many other kinds of trees and shrubs will give as good satisfaction as the apple. Here is an interesting field for experiment.

WALTER F. HEATH.

PARIS FANCIES FOR 1891.

Flowers are pouring in, one might say, from Southern France, to meet the demand of the Christmas and New Year *fêtes*. These are shipped in pots or clumps with netted moss around the roots, thus facilitating their arrival in good condition, and they are immediately revived by art of chemicals, best known to the French florist.

Roses are laid aside, and are not the favorite flower; but Chrysanthemums

have superseded these oldtime favorites, and a rose, no matter how perfect, can not vie with a white or pink chrysanthemum. I remember, a few years ago, that these were used only for the dead, but I'll describe a bouquet destined for Madame CARNOT, and you may improve upon it if you can.

It was almost flat, *selon* the mode, and had little shaded red leaves for the border, the center was composed of white chrysanthemums, and raised upon wires, to seemingly dangle, and had a few orchids of the violet tint, and pink ones scattered here and there. This bouquet had a band of ribbon nearly two yards long, which

fastened it to the belt of the corsage, for no one carries flowers, as in olden times; but I regret to say that floral garniture for robes no longer exists, and that breast knots are laid aside.

Attention is paid to decorating mantels, doorways and dinner tables with masses or beds of roses and large, gaudy flowers seem to be most desirable.

Tulips of the deepest rose and yellow are heaped with carelessness into baskets especially made for rustic decoration. I have seen doorways trimmed with choicest ferns and dangling vines, and mantels literally covered with blushing roses and scarlet fuchsias, and in December it means a costly affair in Paris. Sideboards are trimmed with flowers, and sandwiches repose on plates trimmed with wild roses.



A HAPPY NEW YEAR, MINETTE.

Strawberries always coquet with violets, and grapes look well with maidenhair ferns on a supper or dinner table. Christmas cards and New Years cards, too, are laid on the shelf; instead we are to have floral offerings this year, and the florist who can produce a novelty in the way of a design can command a large price.

I saw a floral fan composed of forget-me-nots, a card case of violets, a comb to decorate the hair of strawberry vines and some tiny white flower, whose name I did not learn, and a pair of opera glasses laid in a floral carpet covered or composed of lilies of the valley, also a buckle designed in form of a cupid holding an arrow, and the upper part of the buckle was of tiny white marguerites. So, while breast knots are almost out of date, buckles and epaulets are in fashion.

Speaking of white flowers, as I passed by the Arc de Marceau, in front of a large white marble house, stood a second-class hearse, and inside an oaken casket covered with wreaths of beautiful white roses. The three carriages which followed were empty, and the flowers sent as the representatives of the family, and those white-robed messengers were supposed to express regrets and inability to attend.

The little daughter of the King of Holland, when informed of the death of her father, hastened into the conservatory to hunt flowers to cover poor papa.

It would seem that roses were to exchange places with chrysanthemums, for the former are decorations for gala occasions, while roses, white, red and yellow, mourn for the dead.

The Japanese white chrysanthemums bring an enormous price, and seem in ap-



IN A PARISIAN DRAWING-ROOM.

pearance like the cut paper pompons which decorate the fool's cap of children in their play at soldier. What flower will lead next season in mad, capricious fashion-loving Paris, where change is the law, and where one never tires save of monotony, and where the *esprit* may be compared to a beautiful flower, transcendent and perishable; and since fashion is a fairy dame, has she not the right to say harebells or roses, violets or chrysanthemums, and we must all obey her decree. The Cleopatra vase is all the style for a parlor flower receptacle; its handles are formed of serpents.

The cat has a history and is a representation of a "locomotive cat," much canvassed about in Parisian journals as a traveler, and yet domesticated with driver and stoker, at a

speed sometimes reaching on the Gare du Nord fifty miles an hour. One day, near Amiens, whither passengers were being hurried to luncheon, Minette miscalculated her whereabouts, and was caught on the catcher. The stoker went around and brought her under the shed. She was badly frightened, but caresses soon restored her equanimity, and she took a sudden fancy to her preserver who shared with her his sandwiches. When the train arrived in Paris she disappeared, but in good time returned. Always afterward, at Calais or at Paris, she would disappear. Where she went to no one knew, but with due regard to time tables, Minette would be ready for the engine. She seemed to know that she was an object of curiosity and observation, and would often imperturbably ride perched on the tender, and seemed to take a caterwauling delight in the screaming whistle, especially at night. But at stations she would repel all familiarity of brakemen, porters or passengers who sought her out. I hastily sketched her at Calais, for she will become illustrious, as I noted that many artists were taking the same liberty. I concluded to offer her as a subject for a New Year's design, or floral one, for VICK'S ILLUSTRATED MAGAZINE in wishing a happy New Year to all.

ADA THORPE LOFTUS.

PANSIES ALL WINTER.

I wonder if the readers of VICK'S MAGAZINE know how easy it is to have pansies all winter. I have a cold frame sixty-four feet long and six feet wide and have sold

sixty-five dollars worth this season and have given away a great quantity of them. There has not been a day for three years that I could not pick some, even though the weather was down below zero a great

many times. In the spring they are a great sight and they are very easy to take care of. I picked the day before Decoration day one hundred and fifty dozen flowers with the green on, and could have picked more. A great many flowers can be raised the same way.

F. D., Webster, Mass.

THE APPLE-ROOT LOUSE.

I enclose you a sample of apple-root. It is affected by some parasite or disease. I would like you, if you kindly will do so, to tell me what this disease or parasite is called, as you are long in the field of trees, fruit and flower raising, I thought you would be authority on the subject. I put out here the first fruit farm near this place. It was a piece of entirely wood land taken from the stump, and all new land. The trees, one thousand of them, I am certain, are all affected with this disease, and I will, no doubt, lose my ten acres of newly planted orchard. If I cannot find some remedy for them. What would be your advice in the matter?

J. W. SIMPSON, Mammoth Spring, Ark.

The specimens of roots received showed plainly that they had been infested with



APPLE-ROOT INJURED
BY THE APPLE-ROOT
LOUSE.

the root louse or apple root plant-louse, *Schizoneura langiera*. The insect seeks particularly the extremities or young and tender portions of the roots, which it pierces with its proboscis, and with it draws the sap for its nourishment. The appearance of a root injured by root lice is shown in the engraving herewith. The root is covered with swellings or rounded lobes with a cavity inside, as shown at the points marked A. The cavities contain minute, pale yellow lice, which are often accompanied by larger winged lice. It will be noticed, also, how feeble is the later growth after the injury has

been inflicted; instead of the root continuing its growth of the usual size, it is evidently completely stopped, and then a new growth starts dividing into a number of thin, string-like roots. The piece

of root from which the engraving was made is represented of natural size. The mature insect is about one-tenth of an inch in length, and is covered with a bluish-white cottony substance. In time these insects exhaust a tree or injure the roots to the extent of preventing them wholly from performing their functions, and thus causing death.

The means most successfully employed for the destruction of this insect is applying hot water to the roots. The soil above the roots of the infested trees should be removed until the roots are bare. In this condition water nearly of boiling heat can be poured on the roots, their under surfaces lying on the soil. The insects are killed and the roots are uninjured by the hot water. Young trees that have been taken up, and are out of the ground cannot bear a heat of much more than 150° Fahr.

Some experiments tried in California, with gas-lime placed on the surface of the soil over the infested roots proved successful to some extent in the destruction of the insects. Care must be taken that not too great a quantity of the lime is used, or it will be apt to injure the trees.

GRAPES ROTTING.

I have a nice little vineyard of choice grapes and the last two or three years I have lost a great many of them by rotting before they get ripe, if you know of any remedy that will prevent them from rotting please let me know.

A. E. T., Montgomery Co., Maryland.

During the past year our pages have contained nearly all that was essential of the reliable information on this subject, and during the present year we hope to give our readers the most advanced ideas in relation to it. For the benefit of the inquirer we would say briefly that the means that have been found most effectual to prevent rot and mildew in vineyards is spraying the vines with a solution of carbonate or sulphate of copper. The application of this liquid is commenced early in the season, before or soon after the leaves push out, and is continued about once a fortnight, until two or three weeks of the ripening of the fruit. It is applied by means of a force pump and hose, and through a nozzle that throws a fine spray, so as to moisten all the foliage, both on the lower as well as the upper sides of the leaves. One of the favorite copper mixtures is what is known as the Bordeaux

mixture of which the following is the formula: First, dissolve six pounds of sulphate of copper in sixteen gallons of water, and in another vessel slake four pounds of lime in six gallons of water, after which the copper solution and the lime paste are slowly poured together and thoroughly mixed by constant stirring. The slaked lime should be run through a sieve to free it from the coarse sediment. The water must be heated in order to dissolve the copper.

A solution of copper carbonate is cheaper and more easily applied than the above, and has proved to be more or less effective. Dissolve three ounces of carbonate of copper in two quarts of strong aqua ammonia, then dilute with water to twenty-two gallons.

The use of these solutions if properly applied has been abundantly shown to be effectual in preventing rot and mildew. More or less information on this subject will be given in these pages from month to month.

TUBEROSES IN THE WINDOW.

The wisest man is mistaken sometimes, and though our worthy editor has perhaps forgotten more about flowers than the most of us ever knew, he is just a little "off" in his remarks in the December number of the MAGAZINE, as to the **difficulty* of growing tuberoses successfully in windows. I have grown a few tuberoses each winter for several years, and have *never had a bulb fail to bloom*, although my room is only a moderately

warm one. That they need more care than some other flowers, is beyond question, but they are sure bloomers, if attention is given to a few details.

As everybody knows, the Italian and Pearl tuberoses bloom but once. After the old bulb decays, a new start is secured by growing the small off-sets, or toes, in the open ground until they attain full size, which in the North is generally the second season. To have fine flowers, it is necessary that the bulb be large and strong, and fully matured. To facilitate this, the off-sets should be planted as soon as the ground is warm, in a mellow bed in the garden, exactly as one would plant onions, only allowing more room between the rows of the larger off-sets, as the tops spread a good deal. If kept free from weeds, and hoed occasionally to loosen the ground, they will make twice the growth in a season that they would in the shaded border where generally grown. Light frosts do not hurt the plants, but before hard frosts the bulbs should be dug, the tops cut off and the dry bulbs packed in sand, and placed in a warm cellar or closet over winter. Right here is where many fail. A friend who has had large experience informs me that the common complaint of non-blooming bulbs in the cold North, is largely caused by the parties allowing their bulbs to get too cold in the winter. Many think the Florida bulbs surer bloomers than home-grown ones, but the true reason commercial bulbs bloom better is because they are fully matured, and kept warm over winter. The bulb of the tuberose will stand almost actual freezing, and *grow* as well as ever the next summer, but the embryo flower-bud in the heart of the bulb is much more sensitive to cold, and if once thoroughly chilled never develops, no matter how good the after treatment.

When ready to plant my tuberoses in the ground, I select three or four of the largest and soundest bulbs, and put them back in their winter quarters until midsummer. Some time about the last of July, the month of August, or even as late as the 1st of September, I bring them out and pot them for winter bloom. The potting should be done while the weather is still hot, for the tuberose is a child of the sun, and without a hothouse it is difficult to *start* them to growing in cool weather.

*The remarks here referred to were in relation to ordinary window culture, or such as plants usually receive. Of course an earnest and determined plant-grower will succeed in a measure at least, with almost any plant. If one will commence in the spring and lay aside tubers until midsummer and then prepare them for winter blooming, there will be little doubt of success. One of the most desirable of plants for winter blooming is comparatively rare in window culture proper, and always will be, for the reason that it is necessary to commence in the spring and care for the plants regularly through the summer and fall, and that most people will not do, even most of those who keep window plants. We refer now to the Chinese Primrose. The directions here given by Mrs. LAMANCE are excellent, and, if followed, one may succeed well with tuberoses. Similar instructions were given in the MAGAZINE in Volume XII (1889), page 194. But we much prefer for winter bloom the hyacinths, narcissus, and freesia, which are more easily managed, thrive in a lower temperature, and are quite as fragrant as the tuberose, and leave the latter to start in spring and grow during the hot weather of summer. ED.

All the offsets should be removed from the bulbs before potting. The soil in which I pot mine is sometimes leaf loam mixed with a little sand, and sometimes the regular compost, four parts leaf loam, one part rotted manure, and one part silver sand, all rubbed through a coarse sieve, to make sure that the manure is perfectly incorporated with the rest of the soil to prevent rotting of the bulb. In either case, an inch of charcoal is placed at the bottom of the pot for drainage. When I have them to spare, I give each bulb a five inch pot, but I have grown them in four inch, and even in three and a half inch pots, though the last were deeper pots than the standard three and a half inch.

After planting, the pots should be kept in the sun, and watered sparingly until growth commences. When once fairly growing, too much water can hardly be given, if kept in the full sun, and the warm weather continues. With light, heat, and moisture, they grow like weeds. When cool weather comes, remove to the house, give a location where they will have good light and, if possible, some sunshine. Water them a little less lavishly than in the summer, yet never let the plants flag for want of water. When once an upright stalk begins to push its way through the mass of recumbent leaves, flowers are assured, and if the tuberose are desired to bloom as late as possible in the season, they can then be removed from their sunny location to a quiet corner, and kept growing slowly,—as the stalk and flower-buds develop *very* slowly when out of the sun. When the flower-buds are swelled to half or two thirds full size, and the most forward ones begin to turn white, place in the full sun, and the buds will open in a few days, as large and perfect as in summer, and so sweet that a single blossom will scent a large room. There are few other flowers that can be retarded or forced into bloom after coming into bud, as the tuberose can. Removing from the sun retards the blooming for a long time, and bringing to the light hastens the opening of the blossoms. I have had them bloom as late as the middle of February, by keeping them back in this manner. The buds need careful protection cold nights or they will blast. A thick newspaper pinned tightly around them cold

nights will keep them from being chilled.

Full sized bulbs that have not bloomed in the open ground, can be carefully lifted and kept shaded for a few days until they cease to look wilted. They are quite certain to bloom, but owing to the long period of growth they have already had, they generally throw up flower stalks soon after potting, and so cannot be kept as late in the season as those started in pots in mid-summer. The 8th of this December I cut for a friend a beautiful spike of tuberose, whose buds had appeared the middle of October, just after I had taken the plant from the open ground. This is the latest I have ever had the transferred out-door plants to bloom.

MRS. LORA S. LAMANCE.

ANSWER TO THEO. H. MACK.

Whether the Dinsmore and Mad. Charles Wood are the same rose or not, it is certain that the rose owned by Mr. Mack, and that came to him labeled Mad. Chas. Wood, is not the rose that I have known by that name. His rose "practically bloomed but once,—in June," while our rose, actual observation for the last three years shows it to be constantly in bloom seven months in each year, blooming without intermission from the last of April to the last of November. It is far the most constant bloomer we have in our sixty-five varieties of roses, and so far from being "less thorny" it is a terror to all flower pickers. It is a pity all of our nurserymen are not more careful or more honest, for it is especially annoying to count on some particular variety, only to find you are mistaken at last.

L. S. L. M.

PLANTS—LIQUID MANURE.

If I sow gloxinia seed in February would the bulb bloom the following winter?

Also, the cineraria.

What treatment should they receive during the summer?

When making liquid manure what quantity of cow manure should be used to a certain quantity of water?

When made of high grade commercial fertilizers what quantity should be used? A SUBSCRIBER.

As the gloxinia requires a rather warm temperature during its growth it is not desirable to sow the seed early unless one is favorably situated with a propagating house where the necessary heat can constantly be kept. In window culture in our northern latitudes the month of April is early enough to start it. The young plants

want a uniform warm temperature, with a moist atmosphere, so that with careful attention to watering they will grow on through the summer season without check. With the lower temperature of the fall the plants should be supplied with less water and allowed to ripen, so that the tubers may be partially dried off and then laid away in the soil and in the pots in which they have been grown. Keep them in a dry place and one comparatively warm, at least secure from frost. They will then be ready to start with the warm weather of spring and will show it by putting forth some little shoots. At such time pot them in some rich mellow soil, giving but little water at first, but later more as needed. The plants may be expected to bloom during the summer.

Cineraria seed sowed the latter part of winter or early in spring should make fine blooming plants for the winter following.

The material from which liquid manure may be made, whether the droppings of domestic animals, guano, or any other fertilizer, varies so greatly in its constituents that no definite rule as to ratio of it to water can be given. The rule which some follow is to have it the color of weak tea. If it should be very strong its strength may be tested by dipping some leaves in it taken from a green sappy plant; if the leaves turn brown and shrivel in a short time, as if scorched, it may be known that the liquid is too strong, and can then be reduced by adding sufficient water to make it harmless.

THE CHRYSANTHEMUM ABROAD.

The foreign journals of November have a great amount of matter in relation to chrysanthemums and chrysanthemum shows. France has sent out, this past

year, many varieties with incurved petals; these are simply abhorrent to some English fanciers, and yet there are a great variety of tastes. One variety is announced under the name of Cesare Costa, which is described as one of the grandest and most striking flowers of the present season in the Japanese section. It is of good size, fine build, and very solid; the color a dazzling poppy red. A flower of this color will certainly be in demand.

In England, lords and ladies, and members of parliament, and gardeners and shop-keepers all vie with each other at chrysanthemum shows.

CAULIFLOWER.

The following communication about raising cauliflower by one of the prize growers, was received late.

In reply to yours on raising cauliflower: I sow seed in the hot-bed early in the spring and when the plants have their second or third leaves I transplant them to the cold frame and finally plant them out in the garden, about the same time the early cabbage is planted. I hoe them three or four times before the head starts. I water the plants three or four times with liquid manure. When the young heads get so large that the sun can shine on them I take the outside leaves and fold over them.

WM. KLOSS, *Fish Creek, Door Co., Wis.*

ONE MORE TRIAL OF ROSES.

After spending much money and time in trying to grow roses satisfactorily, I had decided not to try any more; but in the December number of your MAGAZINE I saw an article from Mr. THEO. H. MACK, Ill., which has decided me to make another trial next spring, if Mr. MACK will kindly tell us what varieties to get, how treat them, and how to provide an inexpensive winter protection. (A very modest request truly!)

MRS. D. T. J., *St. Louis, Mo.*





A greeting To all
Of joy and good cheer,
To each may this be
A Happy New Year

M.E.B.

OUR YOUNG PEOPLE.

A NEW YEAR'S RECEPTION.

"How good this breakfast of corn bread has tasted," said Mrs. Clark to her young daughters, on the first morning of the new year, "the meal was fresh and sweet and the thorough baking it had made it delicious."

"But you put something good into it to make it good," said the twelve-years-old Ruthie.

"Nothing but salt and water, nothing else is needed. And the hot coffee that warmed us so nicely this cold morning was made of a freshly burned crust. You and little Eva look as rosy and well as anybody's children. We shall have nice baked potatoes for dinner, and I'm thankful I can give you plenty of such wholesome fare."

"Then what makes you cry? I saw tears in your eyes while you were eating."

"Are you sure?"

"Yes, I am. I often see them when you think I don't. I pretend not to, because I think you are worrying about brother Tom being killed, and then I have to go off and cry by myself, because I don't want to worry you still more."

"Yes, and I always know by your eyes that you've been crying, and I also pretend not to notice it lest we make each other cry still more. During breakfast I was thinking how often dear Tom used to say that when he was grown he should work on a railroad, and when he got to be a conductor he should put us in as good a house as the one we lived in when his father died, and that there should be no mortgage on it either. But before that time we were to have butter and meat and real coffee, and plenty of sugar, he said. But we do not really need those things unless we had to labor hard or were much exposed to the cold. Meat is warming and coffee is stimulating for workers."

"But I'm nearly starved for sugar or something sweet."

"Me, too," chimed in little Eva.

"Oh, no, not so bad as that. Young appetites are keen and give relish to

such fare as ours. When you are older you'll learn that there is much starch in corn and potatoes, and that it is converted into sugar during the process of digestion."

"I don't care for that; I want sugar that's made before I eat it."

"Me, too, want sugar 'fore me eat it," echoed Eva, at which Ruthie laughed, but suddenly sobered as she saw her mother putting irons to heat, and was told that sleigh riders had stopped in front the evening before, and a young man had come to the door to say that the King's Daughters wanted her to hold a reception to-day and let them call on her.

"So, I suppose," she continued, "they are going to give us a bible reading and sing some of their gospel songs, which will be lovely. The frock you have on is so faded I want you to wear the other, and so I washed it, late as it was. I was glad you were asleep and couldn't worry about it."

"But our room, mother, looks so poor and ugly."

"I know it, dear; I've thought it all over. I'm going to lay the large gray blanket in the middle of the floor and tack down the corners. Then I'll use for a bed spread that plaid linen table cloth that my mother spun and wove when a girl. It is very heavy. A fresh towel for a stand cover is all the change we can make. Everything is clean if not beautiful. Your brother's little room is too cold now to be of use, unfortunately."

"But your black dress is spotted, mother."

"Yes, I've thought of that, too. I can stain the spots with ink, as I did my gloves, last Sunday, and will rub some of it on your worn shoe tips. After the dishes are put away you may take the bunch of turkey feathers and brush up the litter around the table and stove, and dust the room nicely while I iron your frock."

Thus did mother and daughter talk in the simple, cherry way adopted by needy

mothers with brave hearts, who crave for their children something of the brightness and happiness of life that belong to childhood. Thus did this mother resort to various devices to cover up her poverty, that even her own children might not realize how poor they were.

At this juncture a rough knock at the door was followed by the entrance of a coarse looking man who blurted out:

"See yer, Mrs. Clark, I just heerd that a lot o' them 'stuck up folks is coming here to-day, with their fol de rols an' palaver, an' I've called to tell ye that ef ye want the rest of us what belong to your class to feel friendly to ye ye'll not let 'em come yer, flauntin' their velvets an' furs in yer eyes, an' drivelin their soft-soddir talk in your ears. Ef ye're a woman o' spirit ye'll take it as an insult fer them to make so free—crowdin' in yer, without no invitation, a showin' off their fine clo'se an' manners, an' comparin' your house an' things to their'n. An' what do they ree'ly keer for such as you an' me? Nothin'. They only want to ease up their consciences a little fer bein' so graspin' an' pompous. That's all. They never think of us 'twixt times."

"Why, Mr. Hardy, how bitter you do talk."

"Ef they divide up their money with the rest of us, we could cut as big a swell as what they do."

"You don't look at the matter right, Mr. Hardy. You know very well that many rich men began as poor boys, with nothing at all. They had natural business talent that helped them on. Others with the same chance had little or none. My own husband was one of them. My father warned me not to marry him—said he would always be a plodding man in business, and so it proved—was in debt for our home when he died, and so we lost it. But he was honest to the core, and gained my confidence by his good hearted qualities and frank, out-spoken words. One of your remarks reminded me of what I once heard my father relate of an Irishman who had argued with his employer that the rich should divide equally with the poor, and all have a fair start. His employer replied that if that were done, at the end of about seven years the former poor men would be poor again, and the rich ones rich. The Irishman answered:

" 'Well, thin, faith-an'-be-jabers, we'd divide up again.' "

Mr. Hardy snorted at this, and then said:

"Well, I s'pose ye're goin' to let them swells come yer an' do an' say what they please. I'm disapp'inted in ye. I see ye're one o' them that's flattered by bein' noticed by rich people. I aint. I'm independent. I tell people that don't keer for me to mind their own business, an' I'll tend to mine. I don't go fawning around an' take favors off of 'em. But you never did stand up fer yer rights. Ye ort 'a' sued the Rail Road Company fer killin' yer boy, an' ye wouldn't."

"The company was in no way to blame. His own oversight, or carelessness, caused his death. As for the callers who are to be here, they intend me no harm, and I can no more be rude to them than I can to you when you say more than I care to hear."

This plain talk sent the annoying visitor away, muttering something about people standin' in their own light. Ruthie, half frightened by his talk, asked her mother what was the matter with Mr. Hardy.

"First of all, ignorance," she answered. "He is so narrow-minded as to be envious of people who are better off than himself, and fosters a low, vulgar pride which keeps him from holding up his head before them in a manly, self-respecting way. Such qualities will make ignoble any man or woman. Now you may put on your clean frock, and dress Eva, and I'll hasten with my little preparations for our callers."

When, at last, the company was assembled—which looked like a "rose-bud garden of girls" snatched from winter snows—what little floor space was left between them was clinked in with baskets, while the table was covered with packages—some of them of very peculiar shape.

"We had intended, Mrs. Clark," began one of the King's Daughters, "to have made this call on Christmas Eve, but the usual interests and routine of our society interfered."

"I think something else interfered" said another Daughter, aside, "we couldn't get the dressmaker to move out."

"Nor the chimney mended," said another.

"And you know a clear title-deed hadn't been got yet," said still another of these royal Daughters.

"No, nor any arrangement made about the mortgage; Christmas Eve, indeed."

"Well, what of it?" laughed the first speaker, "what I said is true. Mrs. Clark, they told me to do the talking, and now can't be still themselves." Then, in a low, sweet voice, she continued:

"What we would like you to understand, please, is this—that no one has felt that you were suffering for necessities. But ever since your last trouble we have intended to remember you in this way, because we truly wanted to. Now Ruthie will help you unpack the baskets in the pantry. The parcels on the table you can open when we are gone."

Little Eva followed the baskets, and there was much chattering and clapping of hands thereafter. "I dess me find sugar," she was saying. "Candy, you mean," said Ruthie, an unfamiliar word to the little one.

When, finally, the empty baskets had been set outside, Mrs. Clark began to speak and faltered. "I do not know how to thank you," she said.

"Do not try," said the chosen speaker, and then hastened to add, "the more bulky things were left in the other house, where they will soon be needed. There are six rooms. Four of them—kitchen, pantry, sitting-room and large bed-room—are plainly furnished. The dress-maker and sister would like to still rent

the two other rooms. They will pay you six dollars rent per month, to which you can add the rent money you have been paying here. It is the same house you once lived in; we thought you would like it for that. Perhaps you will want to help the dress-maker in the busy seasons, and sometimes, perhaps, you'll come into our homes to sew. The teams that are to move you will not come for a week yet. Some needed repairs have been provokingly delayed. Mr. Hardy was to have mended the chimney a week ago. We shall wait on him no longer.

"And now, Mrs. Clark, don't look so dazed and statuesque, but take this deed of the place and lay it away, and be sociable. Perhaps the other girls will talk now."

"Am I dreaming?" said Mrs. Clark, slowly, and Ruthie slipped a hand in hers, and whispered, 'It's like a fairy story, isn't it?'

"No, you're not dreaming," chorused several girls, "and pray don't look so sober over your good luck," added one of them.

"I can't think why you've done all this for me. Explain it," said the bewildered woman.

"We can't," said the chosen speaker, "you wouldn't listen." And then all talked in a charming medley, until it was time to go, when Mrs. Clark and children received a shower of wishes for a Happy New Year all the way to its close.

MARIA BARRETT BUTLER.

WONDERS IN PLANT LIFE.

In the world of plants we find a great diversity of form, color, and substance, yet all are created on the same general plan, each having its own sphere of usefulness and designed for some special purpose in the economy of nature. Plants furnish the support of most animals, and at the same time subsist upon the wastes of animal matter. While the one is dependent upon the other, the closest analogy exists between the two; alike, they are provided with the same means for repair, supply and development. As animal life differs materially and strangely under different conditions, requiring for its sustenance elements of an entirely different character, we find in every locality the

one fitted for the other, and the provisions made for each other in many instances awaken within us a keen sense of the marvellous; at the same time proving beyond question that creation in all its detail is in perfect harmony with an intelligence, of which, the human intellect has not the slightest conception.

As we take a glimpse into the realm of nature, we do not find any selfish principle, on the contrary everything is on the broadest, the most benevolent plan; nothing seems to exist for itself alone. Every plant or flower, from the humble lichen on the rock, to the highest form of vegetable life, has some allotted duty to perform, either to minister to the necessities

of insects, birds, animals or men. Some are designed for food; others furnish an antidote for the various ills incident to a given locality, some furnish material for our homes, and others the material for the apparel we wear; our morning papers can be furnished us but three days from the time the fibre was a growing tree, in the forest two hundred miles away. Many plants seem like way-marks in the wilderness, to proclaim in language, audible to the ear of reason, the greatness and benevolence of the creator. A traveller mentions, that in crossing a plain in Africa, far distant from any stream of water, where no cool shade refreshed him, and, as far as the eye could reach, nothing was to be seen but heaps of sand, extending like the undulations of the sea, he met with many creeping plants of luxuriant vegetation. They were covered with berries, containing nearly as much as three teaspoons-full of water. On inspecting them more closely, he was astonished and delighted to observe a number of mice, the only inhabitants of that inhospitable spot, busily employed in nibbling off the berries, and carrying them to their holes, as seamen would convey casks of water into their ships.

The wise provision of Nature for the birds through the agency of the plant is instanced in the case of the *Lamium palustre*, a native of Labrador. The leaves of this species are formed like spoons, and are all inverted, the concave side being upwards; consequently when it rains, they are filled with water, and afford a fresh supply to the winged inhabitants of that country.

One of the species of *Stapelia* is abundant in the interior of Africa, and, from its wonderful facility for retaining water amidst the severest droughts, has been termed with a happy similitude, the camel of the vegetable world. There has been considerable speculation among naturalists concerning the source of its supply in those torrid regions, where the air and earth are equally destitute of moisture. This is simply one of Nature's economies, the mystery of which she does not impart. Nature never explains, neither does the perfection of her work require it.

The *Nepenthes distillatoria*, or Pitcher Plant, indigenous in the island of Java, is found on the most stony and arid situations, where it must perish, but for the

provident economy of nature. Its leaves are terminal with pitchers, some of them holding nearly half a pint, these are girt round with a lid, neatly fitted, and moveable on a kind of hinge or strong fibre, which, passing over the handle of the pitcher, connects the vessel with the leaf. By the contraction of this fibre, the lid is drawn up whenever it is showery, or the dew falls. When the pitcher is filled the fibres expand, the cover falls down, and closes so firmly as to prevent any evaporation. From these pitchers the plant derives all the moisture required for growth, or development during the excessive droughts peculiar to that country. As soon as the water in the pitcher has been absorbed by the plant, the lids again open to receive a further supply.

The swamps of the Bay of Campeachy, which are on a level with the sea, become so completely parched during the heat of summer, that the huntsmen, who lose themselves in the extensive forests with which they are covered, would be in danger of perishing with thirst, were they not provided with living fountains in the wilderness where there are no springs or running water. The trunks of a kind of pine, indigenous to the soil, are covered with a species of fungus, called, from its peculiar form, Pine-apples. They resemble a packet of leaves piled one upon the other, and are so full of sap, that, on piercing them with a knife at the base, nearly a pint of clear and wholesome juice immediately distils.

The commonly-called Raining Tree of the Canaries, which affords a regular supply of water to an island destitute of that blessing, is another wonderful instance of Nature's wise provision for man's necessities. This interesting tree is an evergreen, of considerable size, with leaves resembling the laurel. Every morning a mist arises from the sea, which rests on the thick leaves and wide spreading branches of this tree, and distils in drops, during the remainder of the day, till it is at length exhausted. The peculiar situation of the tree enables it more readily to attract the mist, as it stands on a rock at the termination of a long and narrow valley. The water which distils from it furnishes every family on the island with what is sufficient for domestic purposes; and persons are appointed by the council to judiciously distribute it.

The wonderful effect of a simple plant by way of inspiration is beautifully illustrated by an incident in the life of that celebrated African traveller, Mungo Park. He found himself in the midst of a vast wilderness, surrounded by savage animals, and by men still more savage. He was five hundred miles from the nearest European settlement, and considering his fate as certain, he thought he had no alternative but to lie down and perish. At this moment the extraordinary beauty of a small mass irresistably caught his eye, and, though the whole plant was not larger

than the top of one of his fingers, ne could not contemplate the delicate formation of its roots, leaves, and capsules, without admiration. Can that Being, thought he, who planted, watered, and brought to perfection, in this obscure part of the world, a thing which appears of so small importance, look with unconcern upon the situation and suffering of creatures formed after his own image? Thoughts like these would not allow him to despair. He started up, assured that relief was at hand, and he was not disappointed.

C. L. ALLEN.

THE QUAIL'S NEST.

Guess, in the pasture field what we found !
Cozily hid beneath bending sprays
Of briars and weeds, and by fragrant maze
Of prickly wild roses guarded round,

Cozily rounded and hollowed out,
A nest on the ground ; and snug in it lay,
Full in view, for the bird was away,
Twelve pearly eggs ; Bob White's, no doubt.

This was on Monday. We marked the place,
Noticed what plants in what groupings stood
Near the next bower, how far from the wood,
Saw, at the right hand, a crowded space

Of sassafras sprouts ; on the left, fair to see,
A lovely flush of pink centaury spread,
Some sumac leaflets already were red,
And a grape vine clambered from tree to tree.

So, to the pasture each day we went,
To fill with berries basket and pail,

And from musical throat and glad heart, hale,
Bob White's sweet whistle was ever sent.

And ever we sought the sheltered nest,
And shyly peeped, not to fright the bird,
And still, from the distance the clear call heard,
" Bob White ! Bob White !" sounding east and west.

To-day the centaury's pink flame shone
From afar, as before, but our steps were met
By a brood of young Bobs, each eager to get
His bit of earth's bounty—each holding his own.

Full fledged, bright eyed, all alert, all there !
Small, downy darlings, swift to heed
Their mother's bidding, to follow her lead,
Or hide 'neath the herbage, if in her care

For their safety she tells them to ; so they rove
Through the pleasant land in the sunshine
bright.

So the large blessing on them shall alight,
That shelters the sparrows with care and love.

ABBY S. HINCKLEY



EDITOR'S MISCELLANY.

A WOMAN'S TRIP TO ALASKA.

The Cassell Publishing Co. of New York have brought out a beautiful book with this title. It is written by Mrs. General C. H. T. Collis, author of a "Woman's War Record." The book is an account of a voyage through the inland seas of the Sitkan Archipelago in 1890. It is finely illustrated, mostly from photographs taken *en voyage*, the engravings being made by the American Bank Note Co., which is enough to indicate their fine finish. There is also a map of the Alaskan district traversed, and a large plate showing the Muir glacier.

Starting from Philadelphia all the points are noted which one would most wish to know in making a similar trip. The interest is maintained from the first to the last page, and there is not a dull line in it. Scenery is described with the greatest vividness, and bits of history, anecdote and biography make a brilliant recital; without giving weary statistics or even pretending to any minute account of the great Alaskan territory, one is made acquainted with some of the great and beautiful features of the country, its inhabitants and their character and general condition, together with the trend of events under the influence of its present white population with its mining and trading propensities, and the efforts of the missionaries to improve the condition of the natives. The mountains and the glaciers, the immense forests and the numerous islands along the coast constitute the peculiarities of its landscapes, which are sublime and beautiful.

ESCHSCHOLTZIA, THE CALIFORNIA STATE FLOWER.

At the December monthly meeting of the California State Floral Society, the question of selecting a State Flower, which has occupied the society's attention some time, was decided. Votes by ballot were cast for the Eschscholtzia and two others, less well known native blossoms; that brilliant golden flower, commonly known here as the Californian Poppy, taking the lead by a large majority.

The chrysanthemum show of the California State Floral Society, was held during three days in November, in the new building of the Academy of Science, on Market street, San Francisco, and was a marked success. This young society, little more than two years old, has steadily progressed in favor and prosperity, promising soon to be the mother of branch societies. E. S. R.

HORTICULTURAL MEETING.

The thirty-sixth Annual Meeting of the Western New York Horticultural Society will be held in this city, on the 27th and 28th days of January. An interesting meeting is anticipated, and some valuable papers will be read before the society. Fruit-growers, especially, should be present at this meeting, and it is hoped that every town in Western New York will be represented. Fruit-growers from various parts of the country are expected. Arrangements will be made for displaying all fruits that may be sent for exhibition.

RASPBERRIES AND STRAWBERRIES.

T. T. Lyon, the well known Michigan pomologist, names the following varieties of raspberries for family use: First, Thompson; second, Turner; third, Herstone; fourth, Golden Queen; fifth, Cuthbert. And with high culture and careful winter protection, Brinckle's Orange may be added to the list. Refer-

ring to his trial the past year of different varieties of strawberries, he says the Parker Earle has out-yielded everything else among the ninety or more varieties on his grounds. It also takes a leading position as to quality, beauty and even size. It is not one of the largest berries, but large enough.

THE COSMOPOLITAN.

The Christmas number of the *Cosmopolitan Magazine* is an art gem. Its engravings are of the highest character. Among other illustrations, it shows a series of cartoons along the base of each page, running through the whole number, 123 of them in all. Each of these illustrations is but about three-fourths of an inch in width, but the designs are so complete that a world of meaning is conveyed. The subject is Christmas, showing its origin and history through the centuries down to the present time. Some of these are sermons of wonderful significance, and all of them are rich in thought. The matter of the Magazine is varied and most interesting. The whole number of illustrations in the December number is two hundred and twenty-eight.

HORTICULTURE AT THE COLUMBIAN EXPOSITION.

Both the Illinois and the Michigan State Horticultural Societies have protested against the classification assigned to horticulture, as proposed by the officers of the Columbian Exposition. This is right, there can be no proper arrangement of horticultural objects as now classified by the Commissioners. The classification proposed by the Illinois Society, is as follows:

Department B—Horticulture.

Group 21—Pomology. Group 22—Vegetables. Group 23—Floriculture. Group 24—Viticulture. Group 25—Arboriculture. Group 26—Appliances and Methods of Horticulture.

PLANT DECORATIONS.

Decorative plants are extensively used in Washington, at receptions and dinners. Wagon loads of them pass through the streets almost daily.

Two thousand Catharine Mermet roses were arranged on a Fifth Avenue, New York, dinner table, a short time since. There were pink candles and shades to match. Opposite each lady guest was a little poke bonnet filled with the roses and tied with a pink ribbon, on which was painted the name of the guest.

SCRIBNER'S MAGAZINE.

H. M. Stanley's article on the Pigmies appears in the January number, with many illustrations. It also contains the second paper, with many engravings, of Japanese People, by Sir Edwin Arnold. An engraving of the Blue Mountains, Australia, forms the frontispiece. It is a beautiful number, and full of good articles.

FROM A SKATING SONG.

Who chooses may boast of the summer-time.
Hurrah we cry for the frost and rime,
For the icicles pendent from roof and eaves,
For snow that covers the next year's sheaves!
Hurrah for the gleaming glassy lake
Where the skaters bold their pleasure take!

—*Harper's Young People.*

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"The merits of Ayer's Cherry Pectoral cannot be over-estimated. It allays inflammation and soreness of the throat and lungs, and cures a cough as no other medicine can. I speak from an extended experience with those affections and their remedies."—H. L. SMITH, *City Editor "Helena World," Helena, Ark.*

"I have always had a weakness of the bronchial tubes, and in consequence, during changes of the weather, have been subject to

inflammation of these organs, causing a distressing cough. Of the numerous remedies I have tried, Ayer's Cherry Pectoral affords the promptest and surest relief. I have used it over thirty years, and should be afraid to be without it."—V. KELLER, *Monroe, Ala.*

"I have been subject to bad colds all my life, but last February I had the most severe cold from which I ever suffered. When everything failed, I tried Ayer's Cherry Pectoral, and, in a brief time, was cured."—CHARLES KEARFUL, *St. Joseph, Mo.*

"During a period of thirty-five years, I have suffered at times from lung trouble, but I invariably find Ayer's Cherry Pectoral gives relief."—H. W. KING, *Augusta, Kans.*

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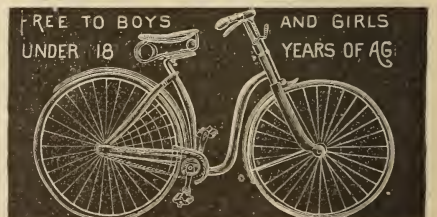
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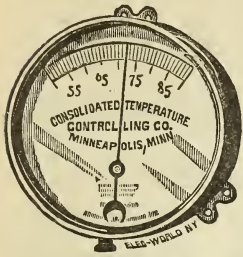
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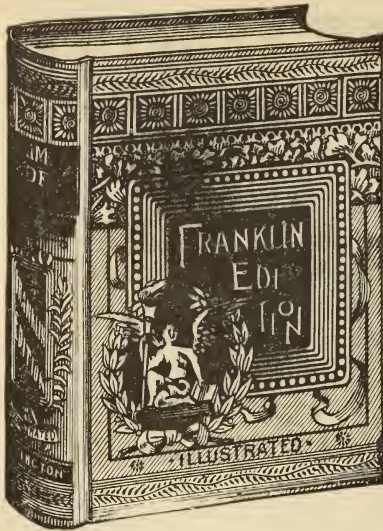
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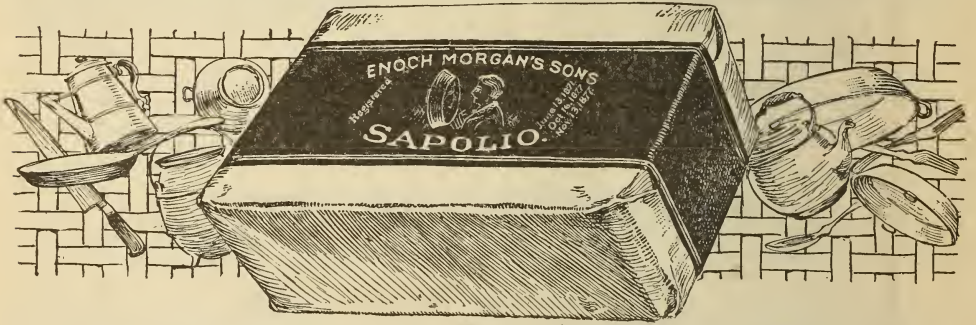
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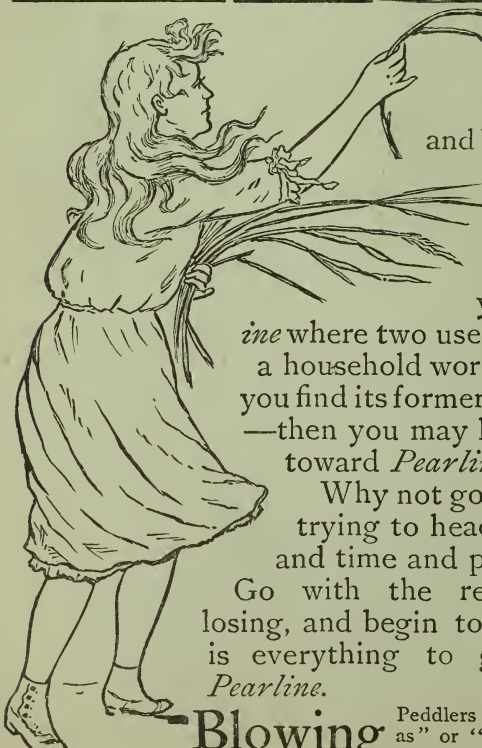
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Vol. 14.

No. 2

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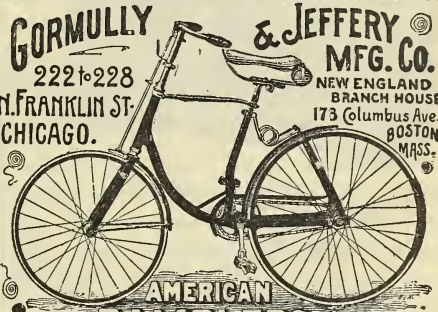
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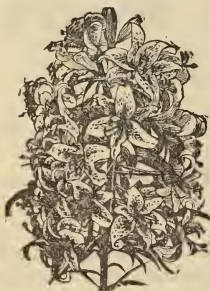
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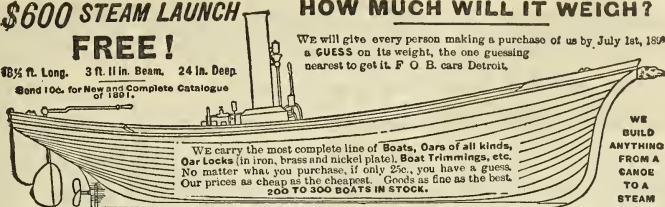
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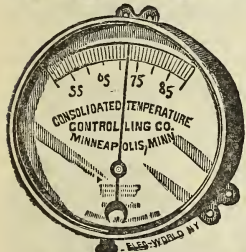
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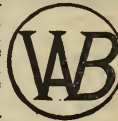
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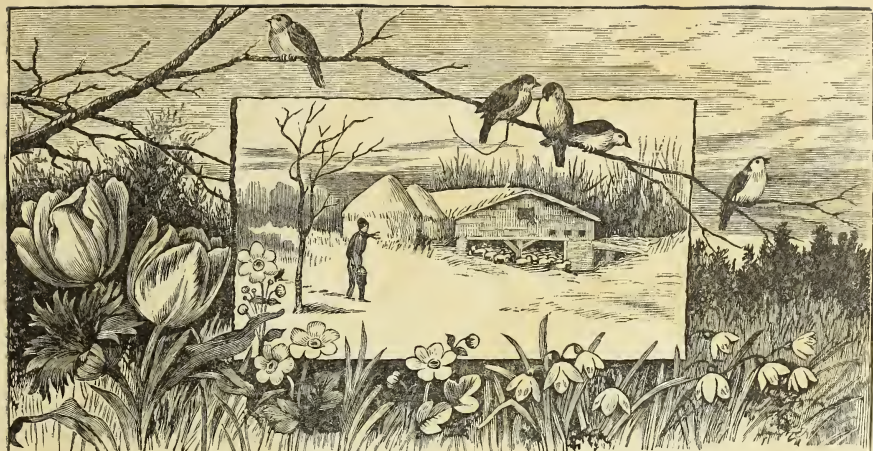
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FEBRUARY, 1891.

ENCOURAGEMENT for fruit growers generally may be had from the example of those of Michigan. At the annual meeting of the Michigan State Horticultural Society, held at Kalamazoo early in December, the Secretary said that preparations are being made for extensive planting of fruit trees next spring. There had been no alarming increase of yellows in peach trees the past year. He recommended a law for the suppression of black knot in plum trees, similar to the yellows law.

President LYON, among other matters suggested immediate action to secure proper consideration for the fruit growing interests of the State at the Columbian Exposition. This is right. It is none too soon to take action in all parts of the country with reference to horticultural interests of all kinds, and we hope to be able to show, before the close of the present year, that substantial advances have been made in this direction. If gardeners and fruit growers in this country will do what they may, the horticultural exhibit in 1893 will be the grandest in fruits and vegetables the world has ever seen.

Kalamazoo is the center of the great celery interest of Michigan, and very properly the subject of celery growing, storing and marketing was given full attention. An interesting paper on the subject was read by Mr. JONATHAN WIL-

SON, of Kalamazoo. In this paper it is stated that in July, 1885, the total area of celery under cultivation within the city limits and suburbs was estimated at twelve hundred acres. At the present time this area is greatly extended. The early plants are now mostly raised in greenhouses, later in hot-beds, cold-frames and in the open ground. The first setting of plants commences about the 10th of May, and there is an effort to commence or get this early crop into market by the 4th of July. The blanching during summer is done mostly by means of boards, for the reason that blanching the plants by earthing up at that season make the celery bitter. "When the first crop is large enough, some time the latter part of June, we commence to set the boards against it for the purpose of blanching, one on each side, clamping them at the top edge. Then with a hoe draw the earth close up to the lower edge to keep the air from passing up, as this would prevent the celery from blanching. It takes from two to three weeks to blanch the celery with boards, so by the 4th of July, if the weather has been favorable, we can have some ready for market. About the 1st of October the work of earthing up the late crop commences, and is usually finished by the middle of the month."

A paper read by Mr. WETTERLING, of Ionia, relates his experience in celery

growing. Here is his last experiment:

I made the rows one foot and a half apart, and set the plants six inches apart in the rows, and worked them until they were half grown without filling them up. I never saw celery grow so fast, each plant trying to grow taller than the others, as they had no room for spreading themselves, and by fall I had as fine a crop of celery as any one would wish to have, white as snow, tender and brittle, and of the most delicious flavor. Such celery will never beg for a market. I have stuck to this practice ever since, and I shall stick to it until I find a better way. I set my plants in July, after I have gathered a crop of early cabbage, beets, or lettuce, as my ground is limited and every inch must be made use of.

This is the same account Mr. WETTERLING gave on page 7 of the last number of this MAGAZINE. This method of cultivation is so simple there can be no excuse for any farmer's table being left unsupplied with this appetizing and healthful vegetable.

A paper on grape growing was read by Mr. W. A. SMITH, of Benton Harbor, Michigan, which was sound and practical. In this paper the statement is made that the demand of the market is for a dark colored grape, and that this demand is on the increase. "While the Delaware is conceded to be the standard of quality among all our grapes, the demand for this grape does not increase with the supply. The demand for it appears to be on the decline, especially when the market is well supplied with the dark grapes."

Competition in grape growing is disposed of in this wise:

This lake shore is largely a grape producing locality, as also are many of the interior portions of our State, and this production is on the increase. Our locality is somewhat anomalous. We are located between two contending forces, the west and the east—California on the extreme west, Ohio and New York on the east. As between our productions and those of California, there is ordinarily but little competition. Each has its allotted place on the market. The one is mainly for the fancy trade, the other for the million; the one pays a high-protective railway tariff tax; the other has free-trade transportation. But not so with our eastern neighbors. They grow the

same kinds of fruit we do, and are largely supplying the same markets. We have little to fear from Ohio—they have many home markets for their surplus fruit, and besides they are not so aggressive and ambitious as those York State fellows. The latter are going to crowd our market more and more, year after year. Locality makes our seasons a trifle earlier than theirs, and if we can take advantage of this circumstance without throwing our fruit upon the market in an unripe condition, we may generally avoid the glut consequent upon their heavy shipments. If we had the Worden and they the Concord, we could easily bridge the chasm. But if we change fruit, won't they, too? So we have to trust to Providence and take our chances.

* * * *

The various reports already made on the use of copper compounds during the last season for the prevention of mildew and rot of grapes are quite favorable to the continuance of the practice. At the late meeting of the Ohio State Horticultural Society a letter was read from Mr. GEORGE M. HIGH, of Middle Bass, Lake Erie. He had used the remedy for five years, and always successfully when it had been properly applied. The cost of material for spraying is less than seven dollars for sixteen acres. The Nixon vineyard cart is in common use among the vineyardists of that locality. With this a man can spray at the rate of twelve to fifteen acres a day.

The mixture is prepared by dissolving one pound of sulphate of copper in two or three gallons of hot water, and when cold, adding to it a pint of liquid ammonia, 22° Baume in strength, and then adding enough water to make twenty-two or twenty-five gallons in all. The average yield of sprayed vines was from two and one-half to three tons an acre. Unsprayed vines yielded not more than a ton to the acre, and it took double the work to prepare it for market.

Some excellent experiments were made the past season in vineyards with different preparations of copper solutions, under the direction of FREDERICK D. CHESTER, the botanist at the Delaware College Agricultural Experiment Station. A record of them is published in Bulletin No. 10, of that Station, Newark, Delaware. In these experiments it is

shown that the Bordeaux mixture, the precipitated carbonate of copper, and the modified eau celeste are efficient agents in protecting the foliage and the fruit from mildew and rot. Space does not admit of describing here these experiments in detail, but the grape-grower may be assured that the most destructive diseases of the vine can be controlled.

* * * *

Spraying plum trees with Paris green to destroy curculio appears to have been successful at the Ohio Experiment Station. An orchard of nine hundred plum trees was operated on—one-half sprayed with Paris green, and on the other half the trees were jarred in the usual way. Paris green was used in the proportion of one pound to two hundred gallons of water. Four sprayings were given; the first just after the blossoms had fallen, second May 15th, the third May 26th, and the last June 2d. As a result it is stated that not 3 per cent of the sprayed fruit was found stung, while about 4 per cent. was injured of that produced by the portion of the orchard which was jarred. The spraying was the cheaper operation.

In relation to this subject Mr. PATTERSON made a statement at the meeting at Hamilton, Ontario, in December, of the Ontario Fruit Growers' Association. He had sprayed his plum trees for five years with a solution of Paris green, two ounces to forty gallons of water, or one pound to three hundred and twenty gallons, and with uniform success in saving his fruit. Whenever a tree or a row of trees had been left unsprayed he had lost the crop. If this weak mixture is sufficient, and no doubt it is, then there will be no danger of injury to the foliage, as there is when used too strong, as was learned by some of the early trials with this substance and London purple.

Experiments made at the Michigan Experiment Station have shown that injury to foliage is more apt to occur from the use of London purple than Paris green, on account of the soluble arsenic in the former. This conclusion has been confirmed at the Cornell Station, in this State, by Professor BAILEY. Trials were made on peach trees to destroy curculio. Some of the conclusions are as follows:

"Peach trees are very susceptible to injury from arsenical sprays.

"London purple is much more harmful

to peach trees than Paris green, and it should never be used on them in any manner.

"Paris green, in a fine spray, at the rate of one pound to three hundred gallons of water did not injure the trees. Probably one pound to three hundred and fifty gallons is always safe."

* * * *

The question of country roads, how they may be improved and kept in repair, is being agitated in various sections of the country. It is a question that directly interests all farmers, fruit-growers and vegetable gardeners. Our countrymen are paying a great deal every year for the privilege of hauling loads over poor roads. "It has been estimated that our poor roads cost the farmer at least \$15 a year for every horse." If such an estimate is half true it is time that the whole subject of country roads should be considered and dealt with in a manner far different from what it is now. The payment of the road tax in money instead of labor, and a competent director to expend the money in the best manner, would, no doubt, be a move in the right direction. Country people think they have a holiday when the time comes to work out the road tax, and the only question seems to be how to kill time. But the fun is all paid for in the end by harness and blacksmith bills, and loss of time when it is valuable. The question of roads is worth discussing at all horticultural meetings and farmers' institutes until a change for the better be made.

* * * *

The Directors of the Columbian Exposition are making progress. The question of the site has been finally settled. The main part of the Exposition will be located at Jackson Park. A great steel tower 1,500 feet in height, or 500 feet higher than the Eiffel tower, at Paris, will be placed on the lake front.

The classification of exhibits has been amended, and is now generally satisfactory.

Class A is designated as agriculture, food and food products, farming machinery and appliances.

Class B, viticulture, horticulture and floriculture.

Agricultural and horticultural societies have now to devise means of promoting appropriate displays.

CALIFORNIA ROSE COTTAGES.

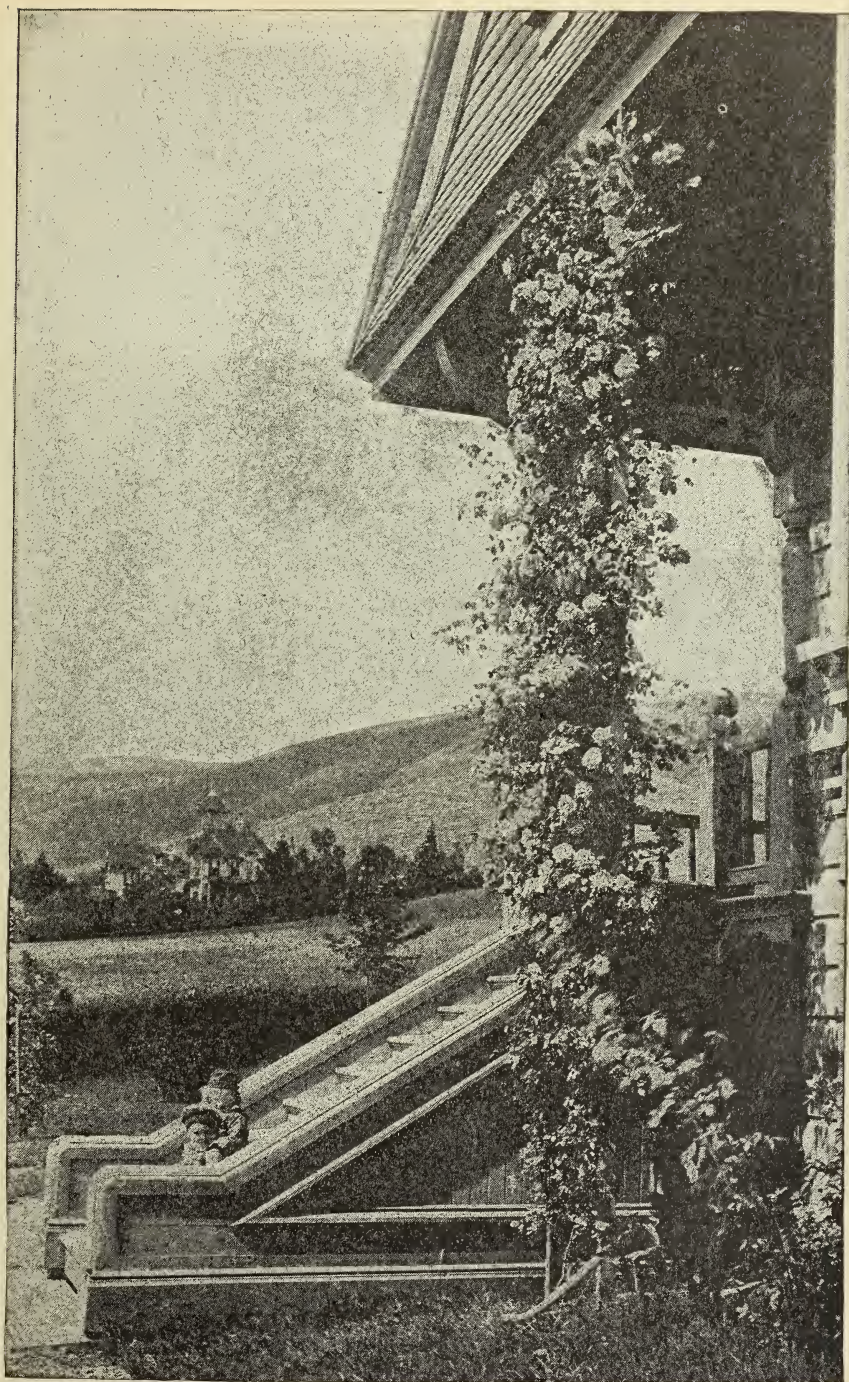
I have often attempted to settle in my own mind the relative claims of different parts of California in the matter of roses. The thing is not to be done, even by illustration. An artist can gather sketches for a magazine article in any town of the Coast Range, or on the Sierra foothills, or in the Great Valley. Roses can be grown everywhere, except, of course, in the high forest belt, where the climate is severe. The rosarians of Santa Barbara form a group of very charming and enthusiastic cultivators of the queen of flowers. Other groups of rose-lovers can be found at Los Angeles, Pasadena, Pomona, Redlands and San Diego—in how many more towns of the South Coast country, I do not know, but, as I have said, every single village has rose gardens.



A corner of Mr. MORGAN's residence, at Berkeley, California.

In the North Coast country, I think that Santa Cruz-by-the-Sea is especially notable for its all-the-year-round rose gardens. So is San Jose, the city of the Santa Clara valley, at the head of San Francisco Bay, between the rivers Coyote and Guadalupe, where Spanish pioneers built their adobes there more than a hundred years ago. So is the seaward slope from Berkeley, the town of oaks, past Clairmount and Mountain View, into Oakland and Fruit Vale, and so on, south, along the Alameda foothills to San Leandro, Haywards, Niles and the ancient Mission Plateau, where priest-planted olive avenues still remain. So are the towns of the North Shores of the bays—San Rafael, nestling in the shadow of Tamalpais; Santa Rosa, in the midst of its valley of oaks; Healdsburg, beside the blue Russian River that sweeps through forests of redwood; Sonoma, in the crescent bend of the "Vale of the Moon;" Petaluma, between sand hills and broad salt water bayous; vine-girdled St. Helena and Vacaville, hidden in orchards of cherry and apricot.

In the warm, rich ravines of the Sierra foothills, the land that perhaps holds more promise for the future than any other part of California, all the forgotten mining camp villages have rose-covered cottages. Far out in the sea-like valleys of Sacra-



Rose Pillar in Berkeley, California.

mento and San Joaquin, town after town makes proof of its fitness for homes by gardens of wonderful luxuriance, wherever water can be had for unstinted use, but

here, as a rule, the winter frosts are sharper than in the hills, and the rose lovers must be content with shorter seasons of bloom.

In the years that have intervened since the brilliant and lamented H. H. wrote the description of her first visit to Santa Cruz, many changes and improvements have taken place there, but the general features are the same, and what she wrote of the flowers is as true now as then. Here is what she wrote:

"The village lies close to the sea. There are houses from which you can throw a stone to the beach. Then, a little higher up, is the business street, where shops and offices and one or two quaint, small inns, with pots of flowers all along their balconies, are set thick together, and contrive to look much wider awake than they are; then rise sudden, sharp terraces—marking old water levels, no doubt—up which one ought to go by staircases, but up which one does climb wearily by winding roads and paths. On these terraces are the homes of Santa Cruz. Not a fine house, not a large house among them, but not a house without a garden, and hardly a house



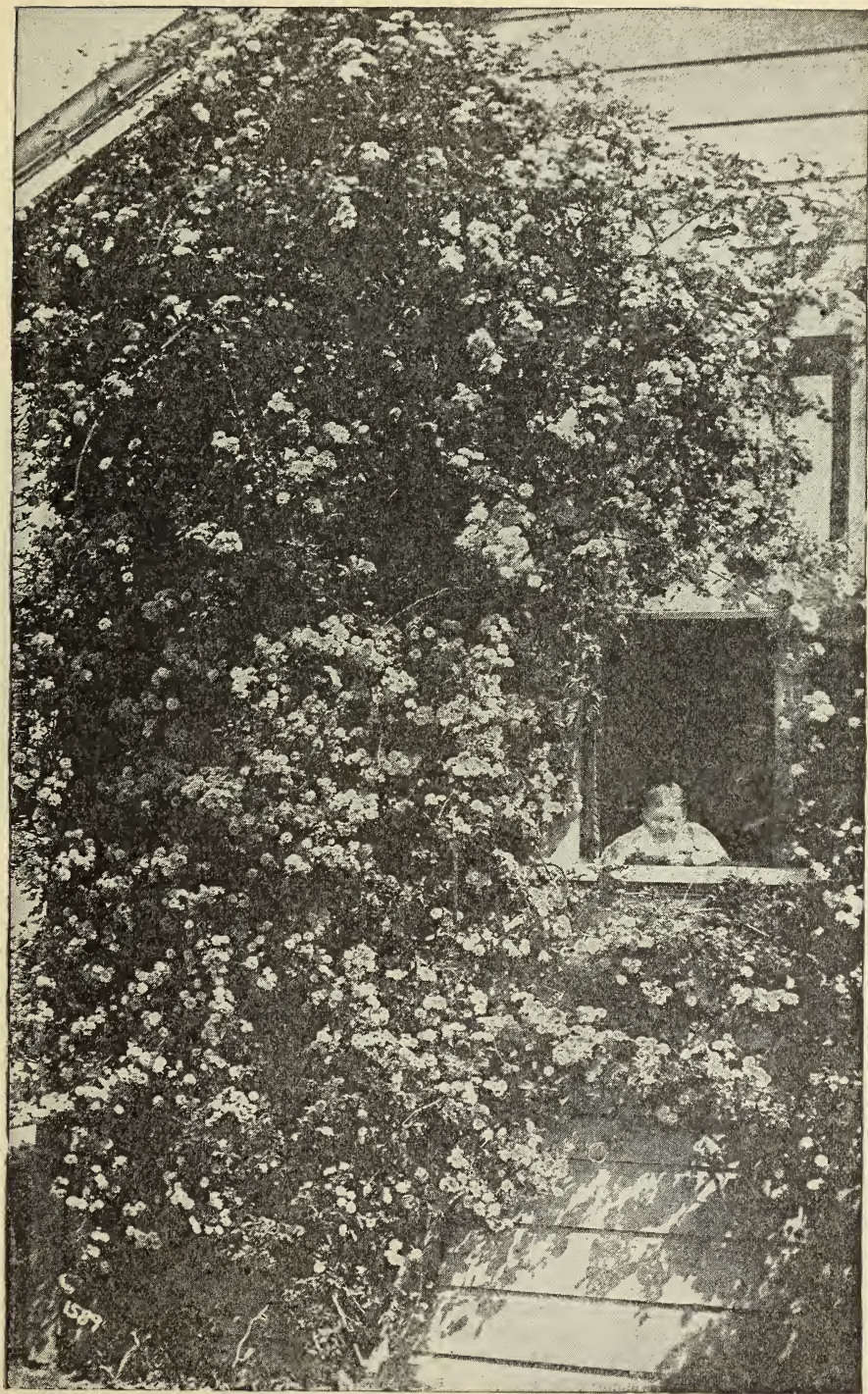
Roses on the face and roof of a Cottage.

without such fuchsias, geraniums and roses as would make a show to be sought after in any other country than this. Is it worth while, I wonder, to say to people who keep a couple of scarlet geraniums carefully in pots in their window; that in this village scarlet geraniums live out of doors all the year round, grow by dozens along fences, like currant bushes, and stick out between the slats, great bits, and branches, that anybody may pick; that they stand plentifully at the corners of houses, running up, like old lilac trees, to the second story window; that a fuchsia will grow all over a piazza, and a white rose bush cover a small cottage—walls, eaves, roof—till nothing but the chimney is left in sight, coming out of a round bank of white and green?

"Believe it who can, that has not seen it. In Holy Cross Village, to-day, are many scarlet geraniums and fuchsias and rose bushes, of all colors, that can witness if I lie."

And here is H. H.'s description of Mrs. POPE's place, in Santa Cruz, where she lodged, and which conveys to us an impression so vivid that the colors of the flowers are bright and beautiful, and the fragrance is borne in upon us in their several odors:

"Mrs. POPE's is a little house, where lady strangers stay. It consists of three cottages and a quarter. In two of the cottages the guests lodge, and take their meals in the cottage and a quarter. The furthest cottage of lodgings is an old one. It is, or ought to be, called the 'Cottage of the Cloth of Gold Rose,' for, on one of its walls, grows a Cloth of Gold rose tree (not bush)—a tree whose trunk lies flat



Banksia and Baby.

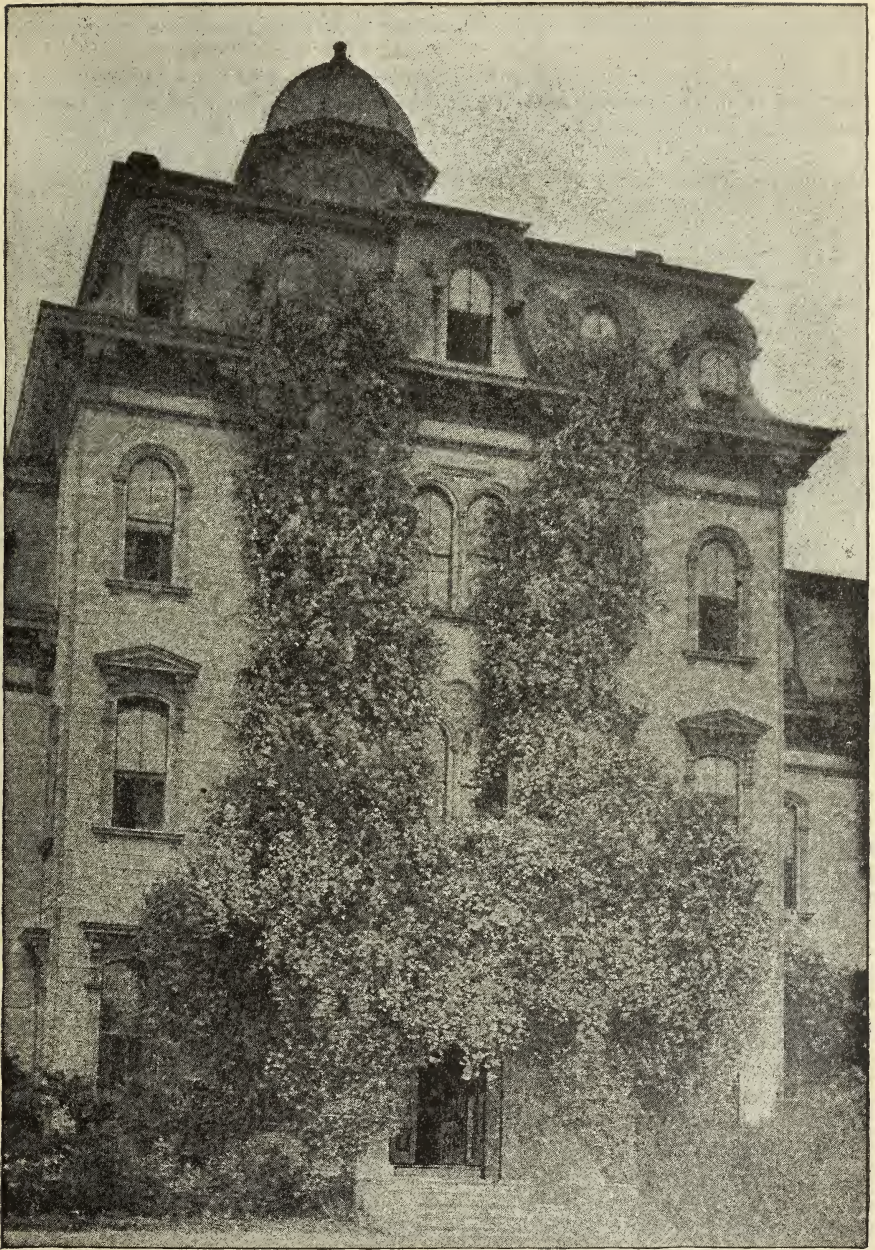
against the side of the house, and reaches up to the eaves before it condescends to branch at all. Then it sends out arms to the right and to the left, and hides the whole length of the eaves, from corner to corner, with leaves and roses. The cottage is very low. The boughs and sprays hang half way to the ground. You can pick as many Cloth of Gold roses every day, as you like, and nobody will miss them."



La Marque Rose, thirteen years old, budded on Cherokee stock, on the SHINN farm house, at Niles, California.

I have spent many hours in rose gardens in different parts of California in the vain effort to decide upon a list of the most desirable roses. No two districts can yet agree, and hardly any two rose growers. We are testing all the varieties that can be obtained, and in another decade many desirable seedlings will probably enter the field. The old favorites that will bloom anywhere and at all seasons, are such roses as Safrano and Rosamond, but I notice that Papa Gontier, Sunset, Paul Neyron and Marèchal Niel are blooming now, November 20th, in almost every rose garden.

But I began with the idea of a rose cottage article, and it will not do to wander into a general winter garden discussion. The rose cottages of California are counted by thousands, and increase every year. Twelve months of growth, under favorable conditions is enough to change a newly built house to a rose cottage. I remember one instance: A young married pair bought a fifty-foot lot, facing south, in one of the small towns near San Francisco. When they moved in, sometime in July, the borders next to the cottage were heavily watered, and spaded. Then a choice assortment of climbing roses in boxes were brought from a nursery, cut back, planted and properly cared for. Some of them bloomed more or less all winter, and all made surprisingly effective growth. With judicious pinching back and training on the walls, the stronger sorts were at the eaves of the cottage in one year after being planted out. By these I mean the single Cherokee and the white and yellow Bank-sia. A Marèchal Niel grew four feet upward, and extended its circumference two feet on every side, and bore flowers daily all the year. A Lamarque climber half way up the window, and covered about twenty-five square feet of wall. Ten cent



Two Banksia Rose Trees in bloom at Mills' College, Alameda County, California.

"roses, by mail," planted along the fence in December gave flowers in April, and by July some of them had climbed half way to the top of the fence. The soil was a strong black loam about three feet in depth on a clay subsoil. Several loads of sand were mixed with it, and though it was old pasture land, long uncultivated, several loads of stable manure were worked into the rose beds. The plants in boxes, chosen for the house, were two years old, and in bloom when purchased.

Such plants cost seventy-five cents here; roses from the open ground perfectly safe for planting in spring can be bought for twenty-five cents apiece, and often for less than that.

Notwithstanding this ease of culture, this marvelous swiftness of returns, one sees hundreds of Californian cottages, long built, weather-beaten and sun-scorched, about whose porches no roses have been planted. It is an inexplicable folly, neglect and disgrace, to be sure, but I suspect that all communities alike contain many persons who live as if they were Terra del Fuegians. I used to see many a neglected dooryard in Mississippi, to which *Magnolia grandiflora* might have been transplanted merely for the trouble. How many cabins in the land of the superb *Bignonia radicans* are barren of adornment, when a child could plant Trumpet Creeper vines about them. Is there any town in all the land that really lives up to the full measure of its floral privileges?

The most noticeable rose plants of the Californian gardens are of the following kinds: Lady Banksia, Lamarque, Gold of Ophir, Climbing Hermosa, James Sprunt, Cheshunt Hybrid, Maréchal Niel, Climbing Devoniensis, William Allen Richardson and single Cherokee. One can find famous specimens of every known variety of climbing rose. Sometimes several kinds are budded into the same stock, but the most effective and permanent results are obtained by massing colors. A superb Maréchal Niel is undoubtedly the thing that is most to be desired in the rose-dreamer's paradise. Here, as in other places, the Niel is an uncertain quantity on many soils, without favoring conditions. The finest Niel I ever saw covered the whole side of a tank-house, and was, perhaps, fifteen years old, but it died suddenly without any manifest cause, and the owner would never plant another Niel. In my observation the Niel must have good drainage, open and careful training, and well ripened wood every autumn to succeed well. The constant irrigation that produces hosts of flowers from ordinary rose beds, will soon get a Niel out of health. But nothing that I have ever seen in the rose field equals a large and prosperous Niel and nothing is more desired by rosarians here, nor made the subject of more numerous experiments.

For ten years, and longer, I have had one unvarying answer to make to people who have asked me what to plant. I have said, "In the garden plant roses first, especially climbers on buildings and fences—plant whatever you like after that; on the lawn, if you have room there, plant an English Oak, to last for centuries, and plant a seedling Date Palm, for the palm will grow in many parts of California, though it will not always perfect its fruit. Plant nut-bearing trees for shade and ornament, until you have all the finer kinds represented. When your rose garden is complete, plant shrubs and herbaceous perennials for the most part." Then, when people ask still further, what roses to plant, I have told them to begin almost anywhere, but that a Lamarque was good to start with, for one could plant it on a hillside with a crowbar, and it would come out ahead. CHARLES HOWARD SHINN.

THE TUBEROSE.

This extremely fragrant and exquisite flower is a native of the East Indies, and was introduced into cultivation about 1630. During the term of three hundred years it has been in quite general cultivation in all warm climates as an out-door plant in large numbers. Owing to its extreme sensitiveness to cold it is not cultivated as it should be, as many people will not attempt to give it a trial for fear of failure. However, when the nature of the bulb and its requirements are better understood, it will be

found to be very easily cultivated, very few failures resulting, and it is in the power of any one to possess these lovely flowers.

As each bulb blooms but once it is well to be careful to get good, extra strong flowering bulbs to commence with. Then take a good sized wooden box, anything from a starch box to a soap box will do for size, it being from eight to ten inches deep. Good sized plant pots may be used which will hold two or three bulbs, or even tin cans can be utilized for the

purpose, each holding one bulb. Be sure to have holes in the bottom of the boxes, or in the tin cans, if used, to provide for proper drainage. Fill these boxes with rich soil and some well rotted manure. But before putting in the soil first put in a layer of potsherds, coal, shells, or anything that will keep the holes from becoming plugged up by the dirt, thus allowing all excess of moisture to pass off.

When planting the bulbs be sure to pack the soil firmly around each one, letting it cover the tops from about one inch to one-half inch in depth, first removing all the small bulblets or offsets. The bulbs may be placed from two to four inches apart. A six pound starch box will hold about eight good large bulbs very nicely, still six would be a better number for a beginning. I use these boxes in all sizes, and in my soap boxes I usually have two dozen or more bulbs in each, but these being so large and heavy are not so easily moved around as the smaller ones. As for having just one bulb in a pot, when with only the same amount of care I can have a half dozen, I never think it best.

When my receptacle is ready I place it in a very warm, but not a hot place. I put mine upon the top, the upper warming oven of my range. For want of this place a shelf above the stove will be very nice. Leave it there, only watering enough to keep the soil moderately moist, for if kept wet before the plants are well up and growing fast the bulbs will be in danger of rotting. When the leaves have pushed up from three to four inches, remove the boxes to a light, sunny place during the day, being careful that the plants do not become the least chilled. I always put them back in their warm quarters at night until the middle of April or first of May, and until well grown, so that they may not be chilled at night, for that would injure the bulb, sometimes blasting the bloom germ. I start my bulbs in this way from the first of March to the first of May, planting them, one box at a time, from two to three weeks apart, so as to have a succession of bloom. By the middle of May, on warm, sunny days, place the boxes out of doors in the sun, removing them back into the house again by sundown. After the first of June they may be left out of doors altogether; but I never re-

move the bulbs from the boxes and plant out in the flower beds. I find they can be so much better cared for in the boxes, for when the weather is dry and hot they can easily be supplied with all the moisture they need, and they like a good deal, they can be protected from the high winds, can have the location a sunny one, the best suited to them. I usually keep my boxes on the back piazza steps, where they get the sun all day, until they are ready to bloom, when I remove them to the side piazza where it is more shaded, in order to preserve the delicacy of the flowers.

Those planted early in March will be in bloom early in July. From July first until the middle of September my husband was never without a tuberose, his favorite flower, in his button-hole. In our climate it hardly pays to wait until real warm weather comes, and then start the bulbs in the ground; the season is so short that our first frosts are often upon us before our tuberoses have opened their buds. Even if lifted at that time and put in pots to finish flowering, there is such a check to the bulb that it never comes out as well after being disturbed. The blooms should be large and perfect and nearly as double as roses. They will last a long time if the flowers are not allowed to fade or grow old on the stalk. Cut them off singly and very carefully, and never try to break or pull them off, as the fibers of the stem are apt to come away, too, and injure the rest of the flowers. One bulb has only one flower stem, and the number of separate blooms on a stem depends on the size and strength of the bulb.

The causes of failure in growing this plant are due to poor soil, lack of moisture and particularly lack of sufficient heat. Watch carefully for the offsets, and as they appear split them off with the thumb nail, thus keeping all the strength in the bulb for bloom.

After the bulbs are through flowering it is well to throw them away, getting fresh ones each year. The offsets would not bloom anyway until the third year, sometimes not then, as our summer season is too uncertain to insure the proper ripening of the bulbs.

There are five strains of the tuberose, and it is really a matter of individual taste which is the most preferable. The

Excelsior Pearl and the Diamond or Diamond Pearl are both strains of the well known Pearl Tuberose.

The Italian, or Common Double has a blooming spike four feet long. The flowers are hardly as large nor as double as Pearl varieties, but they open more perfectly and are of a clearer white.

The single tuberose, or Orange-flowered, is a sweet thing, and it is well to

have two or three bulbs of this variety. It comes into bloom a little earlier than the others, and the fragrance is not so strong. Many prefer this to the double varieties. There is a variety called the Variegated-leaved, this is like the Orange-flowered, only that the leaves have a creamy edge. I tried it last year and found it satisfactory.

JOYCE RAY.

FORTUNE'S PALM.



CHAMÆROPS FORTUNEI.

The Chusan Palm, or as it is more commonly called, Fortune's Palm, *Chamærops Fortunei*, is a low growing evergreen plant. It is a native of the north of India, where it attains a height of ten to twelve feet, and produces a stout stem which supports a handsome head of fan-like leaves, which are split into segments about half way down; the petioles which support them are from one to two feet in length, quite unarmed and en-

closed at their base among a mass of coarse, fibrous matter. The flowers, which are comparatively insignificant, are produced in spikes from among the leaves, sometimes they are perfect, while at others the sexes are separate. The fruit is a one-seeded berry.

On account of its dwarf, compact manner of growth this palm is invaluable for the decoration of the greenhouse at all seasons of the year, the lawn or flower

border during the summer months, and the value of small specimens for window gardens is beyond all question.

To grow the Chusan Palm to perfection it should be given a rich turfy loam and liberal supplies of water both overhead and at the roots during the season of growth. At this time also, liberal applications of liquid manure will be of decided benefit. In the winter, or whenever the plants are in a state of rest, do not water so liberally, yet never permit them to become absolutely dry.

In potting, always use porous or soft baked pots, and let them be proportionate to the size of the plant, and see to it that they are well drained, as this is a most essential point. When repotting avoid mutilating or injuring the roots of the plant, and when grown as window garden plants the leaves should be sponged off occasionally to remove dust,

etc. For the summer the plants can be placed or plunged outside about the tenth of May, in any desired situation, but they should be repotted and brought inside before the middle of September. Care must be taken to keep them properly supplied with water when they are outside.

Propagation is effected by seeds, also by taking off and rooting the suckers, which are sometimes produced, and if these young plants are liberally cared for and repotted as often as necessary, nice specimens will soon be obtained. Those wishing only one or two plants will find it much better to purchase rather than to attempt to raise them, as well established plants can be readily obtained at a very moderate price of any of our principal florists, and these, if well treated, will soon produce nice specimens.

CHAS. E. PARNELL, *Floral Park, N. Y.*

FROST FLOWERS.

Not the autumn's asters, that are sometimes called by this name, but the frail and transient decorations born of the winter's fog clouds, which often sweep these hill summits, the more frequently and with more beautiful effect the higher they are; even fifty or one hundred feet of altitude makes a great difference. The level strata of mist often just touch the highest woods, sometimes envelop the uplands generally, but seldom appear in any force in the main valleys. It is a calm, tranquil time, which may last for days without sun, moon or stars, with a smooth, white, or grayish-white, sky, the world ending at a little distance, utterly silent, not even the wind stirs the trees, spectral in the mist which, borne steadily and quietly onward from the north, slowly gathers in most wonderful decorations, worked out in a dead white, opaque material, every detail carefully attended to. A full exposure to the mist is essential to the best effect, the south side of a grove will have much less frost-work than the northern. It may continue to increase until every twig is an inch or more through, bending and even breaking the branches. With not too heavy a load the trees assume their summer outlines, the thin lines of bare branches along the edge of the fields

become dense masses of foliage bounding the view, and you look into long aisles and far vistas along the woodside, as in the season of leaves. Different species of trees are clothed according to the arrangement of their twigs and buds; sometimes great flowers, like roses, bend the boughs of stunted, twiggy maples or wild apple trees, while on the open land elms are immense fountains showering down on every side. As the burden grows the familiar path through the woods becomes strange, boughs, commonly high over head, bend down across the way, there is no passage unless you creep through or turn aside; the snow dark in the shade beside the brilliant white of the rime is strewn with fragments which you do not miss from the trees. It is the sagging of the boughs that brings them against each other; in the perfect stillness you hear a rattling, with now and then a loud crash, as some great branch comes down. The trunks and limbs, where not frosty, look blacker by contrast, and the woodside is a succession of rare pictures which are found in the open fields as well.

The old thistles have most beautiful decorations, the dead goldenrods, yarrow stalks, etc., also every little tangle of briars and weeds attracts the eye, the thick,

white foliage forms snug shelters into which the rabbits have hopped. And how lovely the great bushes of the sweet-brier rose, with their gracefully bending stems, every twig and spur delicately tipped and ornamented, and the scarlet hips shining through. While the fog lingers you must attend to details; the broad summit of the hill is merely a flat standing place, but one night it vanishes and the dawn shows the horizon clear to the farthest verge, the woods dazzling white on the high summits shading off into brown or purple on the lower hills. In the northwest a dark band along the horizon, the rearguard of the routed night, brings out the great golden bubble of the moon hanging above the resplendent forest, while far and near, shining forms of trees are bright against the blue. How splendid this broad thorn tree, with its wealth of detail just touched by the level sunlight against the bluish tint of the snow in shadow. There is, however, no sparkling, as when an ice storm clears, it is the dead white of chalk. The frostwork does not long endure a clear shining sun, a darkness soon creeps

upward from the valleys; though it may hang on for a day or two upon the coolest peaks, its beauty is soon faded, it is now but a form of water. A thaw comes and water flows, soon little tracts of ice are everywhere, and often, after a clear, still night of intense frost, you find vast numbers of ice plants, apparently of the fern family, an inch or more high, of the purest white, growing out of the frozen surface of the little ponds, often shaded and overhung by rushes and dead weeds upon the land close by. Their seeds are probably in the ice, at least they seldom or never occur elsewhere; if from the atmosphere, they require the ice as a soil. If plates of quartz or other permanent compounds bearing such graceful growths could be quarried, the world would go mad. The fronds are mostly triangular from the greater length of the lower pinules, often branching, erect or drooping; a hand breadth of ice may be exquisitely planted with thickets of beautiful foliage, scattered clumps and single plants in open spaces done in accordance with the best effects of landscape art.

E. S. GILBERT.

CAROLINA WILD FLOWERS.

II.

It is not my purpose to give in these papers a recapitulation of the many beautiful and well known wild flowers of the South, that have been so often and so well described in these pages, but to single out the rare stray wildings less generally known. Our native Azaleas, it seems to me have been slighted by botanists and cultivators. *A. arborescens* is earliest and most showy, as well as most common of them all. The flowers appear in great masses of color before the leaves, and vary in tint from blush-pink through numberless shades in rose-red and crimson to purple. Here, among the Carolina mountains, it is commonly known as Wild Honeysuckle, and it is nothing unusual to see them more than twenty feet in height, erect, well shaped and one perfect mass of vividly glowing, or soft and delicate color. High up on a mountain top I once found a variety of this, which, instead of being clammy and pubescent, had a smooth, shining, Tea Rose texture, and was of a most bright and delicate

shade of pink, but in coming down the steep and dangerous mountain side I lost the flower in some way, and could never find another to analyze.

The flame-colored Azalea, *A. calendulacea*, is not so tall in growth as *A. nudiflora*, but has larger, more open flowers, of beautiful, soft yellow, rich orange and reddish-brown hues. It is the handsomest of all our native azaleas, and a large number of good varieties have been obtained from it.

Azalea viscosa, White Swamp Honeysuckle, is latest of all to bloom, is low growing, and often you find it thick and even as a hedge-row along the banks of mountain streams. Its leaves are smooth, green upon both sides, and appear at the same time with the flowers, which are pure white, waxen, widely open, with short tube and delightful fragrance. This is the only native azalea which comes within my knowledge as being fragrant, although GRAY gives many of them as more or less so.

L. GREENLEE.

A BEGINNER IN FRUIT-GROWING.

XI.—SHOALS AND QUICKSANDS.

The rose-colored pictures of pleasure and profit in fruit growing, which one or two popular writers have put forth in various forms during the past year, will, doubtless, lead a great many to engage, to some extent, in an undertaking in which previous experience will form the smallest part of their stock in trade. Such beginners are apt to make shipwreck of their ventures in several ways, and the chief of these are planting too many varieties; planting those unsuited to the locality; planting new and untried varieties, and trying experiments. A few months ago I visited in a town where the Bartlett Pear is a pronounced success, and where the market demands this variety and very few of anything else. In this township is a Bartlett orchard of less than two acres, that, on pretty reliable testimony, is said to have produced \$4,000 worth of fruit in the last three years. In the same place, a young man has planted three acres of pear trees, and he has twenty varieties. If this young man is wealthy, or has other resources, he can derive a certain amount of amusement and education in watching the behavior of this score of kinds, and as his hair becomes sprinkled with gray he will have benefited other planters to some extent in the results of his experiment; but if his orchard is a matter of bread and butter, he will probably bitterly rue his miscellaneous collection. Two years ago, ELLWANGER & BARRY exhibited one hundred and ten varieties of pears at the State Fair at Albany. About the same time I was through their famous orchard. Of this large number of varieties they had, in many instances, only one tree of a kind, or, at the most, but three or four. Adjoining the miscellaneous orchard were others where the trees were all either Duchess or Anjou. Of these they were shipping by the car load, and the matter was vastly simplified by having so many of one kind. One barrel was a sample of all the rest, and the commission consignee could exhibit a few barrels, and in many cases make sales even without showing the fruit, because it was of a certain well known popular kind.

When it came to marketing the other one

hundred and eight varieties how different the case. In a car load of three hundred barrels there might be three or four of a kind, and possibly of some varieties it might be necessary to put two kinds together to make a barrel. It would take the whole floor of a warehouse to display this car load, and at least one hundred barrels must be opened to show the varieties, most of which would be strange to purchasers, and could only be sold after a great deal of chaffering and explaining, and coaxing.

Again, the cost of gathering, of keeping separate, and of marking the packages is considerable more where there are many kinds, and the waste of odds and ends often nearly equals the amount sold. In packing a hundred barrels of one variety there is but one remnant and that at the finish, but if there were twenty varieties there may be twenty remnants, and owing to difference in appearance or time of ripening, no means of uniting these remnants into a full package, which if this were possible, would only be a mixed lot and to a certain degree unsalable.

These drawbacks in the way of many varieties hold true in relation to all tree fruits, although to a less extent with peaches and plums, as these are marketed in smaller packages. In small fruits and grapes the unit package is so small and the knowledge of buyers so indiscriminating that it makes less difference whether one has one or many varieties in the marketing, but in the setting out, keeping varieties separate, and in picking, the growing of many varieties entails endless care, and calls for constant oversight and supervision on the part of the owner.

There are only two or three arguments in favor of a number of kinds, the principal one being the chances of avoiding a glutted market by having some kinds in season when the leading kinds are out. If one has a "peddle market," and delivers from house to house, it is often an advantage to have a collection that ripens something every week in fruit season. Several parties whom I know make considerable by exhibiting at fairs their collections of a hundred or more kinds that

ripen in September, but this is a business that holds out no certain results, and is only adapted to wide-awake, advanced horticulturists.

The disposition to experiment, which is, no doubt, fostered at the present time by the large amount of Experiment Station literature, is one that the beginner can ill afford to indulge in.

Personally, I have never been prone to do much of this, preferring to turn my energies in other directions, but last year I was forced into it by outside parties. Early in the spring I received, by mail, from a young strawberry enthusiast, a dozen strawberry plants for trial. He praised them highly, and made no reservations or restrictions, so I could do nothing less than plant them in a piece of ground devoted to the garden. Two weeks later, without warning, came from a personal friend eight kinds of strawberries and half a dozen raspberries. Later came another consignment, and after that two dozen of another kind of strawberry from New England, and a grape vine. These were all unsolicited, remember. Then I found two beautiful little strawberry plants in a clearing, and a promising blackberry bush, and concluding I might as well "be hung for a sheep as a lamb," I moved fifty seedling blackcap raspberry plants, so altogether I had three rows of experimental stuff, each twenty-two rods long. These were a nightmare all summer, and as it turned out did not receive quite as good cultivation or care as an acre and a half planted elsewhere to standard varieties for commercial purposes. This was because I dared not trust it to hired help and tried to take care of it myself, when I had all I could do besides. However, I pulled them through, losing but a few plants, and have now a larger elephant on my hands than last year, with a prospect of an increase of trouble in the same direction. As I did not solicit the work, I suppose the experiment might be stopped at

its present stage, simply reporting on one season's results; but in spite of the extra bother entailed, I have become interested in some of the varieties, and with the fascination that lures on the gambler I shall pursue the game at least another season.

However, if I multiply the experiment only seven times (which will not give very long rows of some kinds) it will take a full acre. This means in planting, care and cultivation, and mulching from \$50 to \$70 of outlay, with a large margin of uncertainty in the result, as all are untried on my soil, and judging from the ratio of worthless new varieties yearly put out, fully half of those planted will not pay expenses. Were I just beginning or cramped for land, the results would not warrant the attempt. I shall, in planting, reduce care and expense as much as possible, and so arrange as to be able to entrust the cultivation to others. Advantage will be taken of a triangular piece of ground and beginning at the shortest rows will plant the most unpromising kinds and those of which I have the fewest, and so on, devoting the longest rows to the best. Heavy stakes, not easily destroyed, will mark the rows, and there being one kind to a row a plat can be kept on record so the stakes will not be absolutely necessary to identify varieties.

I will close with one more admonition to beginners, and that is to make diligent inquiry as to what varieties are successful in the neighborhood, and plant such, having equal care to the demands of the market.

It is easy to become fascinated with a great many kinds as described in the advertisements and catalogues, and the leisure of winter gives opportunity to build many castles thereon, but in the long run it will be found best that they conform to their surroundings in both foundation and superstructure.

L. B. PIERCE.



FOREIGN NOTES.

PRUNING GOOSEBERRY BUSHES.

No greater error prevails in the culture of this popular and very wholesome fruit than the practice, still followed by many people, of cutting back the individual shoots to within a bud or two of their base, with the natural, but very undesirable result that a thicket of weakly shoots and small fruits only is produced. The way to obtain fine large berries as well as handsome bushes heavily laden with ropes of rich fruit is to thin out the shoots freely, and where very long and weak to shorten them back a little, so as to promote a balance of growth in the bushes as well as to prevent the fruit-laden shoots from touching the ground, in which case they would sustain injury by grit and damp. Thus treated, the bushes, in consequence of the weight of the crop, will assume a pendulous habit, and the center of each bush being partly open, the crop can be gathered without the hands being scratched in doing so. The sooner the pruning is performed after the fall of the leaf the better will be the results. When the pruning is completed remove the prunings to the fire heap, and with a rake draw back a thickness of one inch of the surface soil about three feet or four feet, according to the diameter of branches, from the stem of each bush, and when the branches are quite damp and the weather calm dust them well with fresh lime. This will not only save the buds from the onslaught of birds and kill the moss, which is so ruinous to thousands of fruit trees, it will also destroy the larvæ of the gooseberry caterpillar that may be located on and underneath the bushes. This done, lay on a good surface dressing of short manure, and point it into the ground with a five-tined fork.

H. W. WARD, in *The Garden*.

ROSE SPORTS.

There are two ways in which this variation occurs in the rose—(1), in a change in the habit of its growth; (2), in a change in the color of the flower. We have many instances of what are called

climbing varieties of many of our roses, the most notable of these being perhaps climbing *Devoniensis*, and climbing *Niphetos*. We have also Victor Verdier, Captain Christy, Charles Lefebvre, and others, which have developed the same tendency. The why or wherefore I have never yet heard explained. Take, for example, *Devoniensis*, in its normal condition a very small and even delicate grower, there appeared many years ago with Mr. PAVITT, of Bath, a very vigorous shoot, which shot away to a length of sixteen or eighteen feet in one season. This was so very remarkable, that he determined to propagate it; it has remained true to its character, and makes shoots sometimes of twenty feet in a season. At the same time, there is no deterioration in the flowers, which are so like those of the type that the National Rose Society has bracketed them together. Another instance of a similar character has occurred recently in climbing *Niphetos* brought out two years ago by Messrs. KEYNES, WILLIAMS & Co., the noted Salisbury firm; this, like that previously mentioned, will sometimes grow twenty feet in a season, although it is well known, the plant itself is a dwarf Tea, but of more vigorous constitution than *Devoniensis*. I do not at all know how this is to be explained.

Amongst the Hybrid Perpetuals we have also several so-called climbers, but they do not attain to the same vigor of growth as the Teas mentioned, still they will make shoots sufficiently long to make them good pillar roses, such are Captain Christy, Bessie Johnson, Charles Lefebvre and Victor Verdier, but I have not seen on any of these as good flowers as could be gathered from dwarfs of the same variety; this may not be the experience of others, but it certainly is mine. They make very effective pillar roses, and when these are required, it is better to use them than hardy summer blooming roses.

But the most frequent and most interesting cases of sporting are those which occur in the flower; they are continually

taking place, and perhaps in more cases than we are aware of. The usual procedure is this : a branch of some particular variety shows a bloom of a different shade of color ; buds are taken from this branch ; the budded or grafted plants are carefully watched to see whether the sport is what is called fixed, *i. e.*, whether the blooms produced on plants budded from the original one will show flowers of the same form and color ; sometimes they do not, and at other times they remain true.

I have noticed that very often on these sports there is some deterioration in the substance of the flower, as in the case of White Baroness, which is not nearly so full as the rose from which it has originated ; while in another flower of the same origin we have an entirely different build, as Merveille de Lyon, it is more open, and not such large petals, has a great tendency to show the eye. I once thought I had obtained a white Catharine Mermet, that was before The Bride was introduced, but it did not remain true. Some roses are much more inclined to sport than others. Baroness Rothschild is one, and Madame Clemence Joigneaux another ; from the former we have had Mabel Morrison, White Baroness, Merveille de Lyon, and, perhaps, Puritan ; from the latter, Pride of Reigate and William Warden. In the case of the sports from the Baroness, they are all in the direction of white flowers, the pale tinge in the type being eliminated.

WILD ROSE, in *Gardeners' Chronicle*.

FREESIAS.

It would perhaps be impossible to name anything more beautiful or chaste than these lovely Cape bulbous plants when in flower. The old way of growing freesias was to dry the bulbs off very carefully after flowering, and afterwards to shake them out, and go through the usual sorting and sizing before restarting them into growth again in early autumn. This annual drying off for three or four months or even longer is a great mistake, the result being that many never start again at all, and those that do start instead of exhibiting increased strength and vigor, hardly flower so well as in the previous year it may be, and certainly show no signs of improvement. The

general cultivation of freesias is at the present time very imperfectly understood by the majority of gardeners. The freesia for cutting holds an almost unique position. By strict adherence to the old way of growing these lovely fragrant flowers, one is made to believe that their tiny bulbs would never properly increase to flowering size if they did not undergo year by year the sorting and sizing to which they and other plants are subjected. Such a course is all very well from a commercial point of view, but with this the average gardener has nothing whatever to do. My present remarks concerning freesias will, it is hoped, prove seasonable, as I doubt not many will have had them in flower during the past and present month with other batches to follow on. A continuously moist soil is absolutely necessary for freesias, and throughout the growing and flowering season they may, indeed they should be, kept almost at saturation point, not by standing them in pans or saucers of water continuously, this they will quickly resent, but by giving them abundant supplies two or three times daily. Instead of drying them off when the flowering is complete and when they show signs of diminished activity, simply lessen the water supply, never allowing the soil to be anything approaching dryness. There is not the least necessity for shaking the bulbs out every year and sorting into sizes. Instead of this, grow them on and shift into larger pots as they require it. The usual sized pot for starting them is a five-inch one, capable of accommodating a dozen average large sized bulbs. These if grown as I have described should the following year be placed into six-inch pots, and so on yearly according to their strength individually, repotting them annually in the latter part of August or early in September. Let those who delight to have these lovely sweet-scented flowers pursue this mode of culture for two or three years, and compare the results from previous experience.

While growing freely weak liquid manure may be given twice weekly. The most suitable soil for them is loam and peat in equal parts, adding some sharp sand and some rotten manure. Pot very firmly, and last, but not least, provide free and ample drainage. By reason of their water loving disposition they have

been termed sub-aquatic, but those who know them in their native haunts assert that they have not the slightest claim to such, as they are usually found growing in spots altogether removed from such conditions, inhabiting, in short, dry, stony ground, which in the end but furnishes another instance of how very little value to the cultivator is the natural habitat of a plant. It is certainly interesting to be in possession of the fact, more particularly when such things are grown to far greater perfection under conditions quite different from those where they grow naturally. The most suitable temperature is a moist one of about 50° or 60°. A very common complaint is the difficulty in starting *Freesias* into growth, an item which tells its own tale; they have been kept too dry and are merely showing their disapproval of it. There will be none of this trouble where the soil has been kept moist throughout.

E. J., in *The Garden*.

DWARF EGYPTIAN LILY.

A dwarf form of the common calla, *Richardia Æthiopica*, has been raised by Mr. H. ELLIOTT, in the island of Jersey. It was raised from seed of the common calla, and grows from nine inches to a foot in height. It is described as a free-flowering plant with graceful foliage. It is called Little Gem, and one of its merits is the small space it requires, as it can be grown in quite small pots. A demand for it will, no doubt, be made, but it will require considerable time to get up a stock of it, and it will not be put on the market until a sufficient supply has been raised.

HONESTY IN MASSES.

All hardy flowers look best in masses, few more so than the *Honesty* (*Lunaria biennis*), which is well known for its flat, silvery seed-pods, sold in bunches in the markets at this season of the year to arrange with dried grasses and everlasting flowers. We were in a fine old Surrey

garden the other day, and on the broad well planted borders were large clumps of *Lunaria biennis* several feet over and very bright, even with the ground under a covering of two inches of snow. The purple flowers are sweetly scented, and in April or May the plant is effective when grown into good clumps on the border, margin of the shrubbery, or half shady spots.

The Garden.

FICUS ELASTICA VARIEGATA.

This plant is decidedly gaining favor. Some plants of it which I saw recently were beautifully marked or marbled with creamy-yellow and pale green. It apparently requires a good amount of light to develop its beauties in the best possible manner; added to this a rather poor soil to check any tendencies to a too vigorous growth, with a less amount of variegation. Given these essentials, it is certainly a useful addition to the class of decorative plants for use in a small or medium sized state. It can be propagated true to character from individual eyes, nice dwarf plants being thus obtainable in small pots. In order to increase the stock, plants of this ficus may be grown in rather more warmth than is accorded to the type, but at the same time exposed to all the light possible.

H., in *The Garden*.

ANTI-MILDEW POWDER.

According to a correspondent of the *Gardeners' Chronicle*, a powdered mixture for the prevention of mildew has been prepared by an Edinburgh firm. The substances used are sulphur, sulphate of copper and lime. These are reduced to a very fine powder. It is applied dry when the leaves are wet with dew or rain. A trial of it has been made on vines at Oporto, Portugal, with good results. Sixty-five tons of it have been ordered for three neighboring vine growers, and the demand for it for a time will probably exceed the capacities of the manufacturers.



PLEASANT GOSSIP.

VARIOUS INQUIRIES.

1. What is the best method to get rid of lice on cineraria, cyclamen, chrysanthemums and abutilon?

2. What do you recommend for worms in the pots? Some use hot water, others, carbolic acid, and some, lime. Dry atmosphere is claimed to be the cause, but our plants are in the kitchen where the teakettle is steaming, and still the worms bother us.

3. What shall I do to keep the red spider from violets and roses? One of the roses looks moldy and dusty: what is the cause and remedy?

4. How can I get roses to bloom in the house all winter?

5. What is the best way to strike abutilon cuttings, also some of the Ivy-leaf geraniums?

6. How can I get Moonflower and Perennial Phlox seed to germinate?

7. What treatment do fuchsias require to bloom as well in the winter as out of doors in the summer?

8. How do you treat freesia bulbs after they are through blooming?

9. Will the small bulbs on the tuberose ever make blooming bulbs?

10. What is the best remedy for the cabbage flea, cabbage worms and lice? The best way to get rid of the squash bug?

11. Asters and some other flowers are eaten up about the time they flower, by a long black, bug, about one-half an inch long, how can I keep them off?

12. Is manure water as good a fertilizer for house plants as some commercial fertilizer? L. M. R.

1. The green lice, or aphids, on plants can be killed by placing the plants in a close place, a box, for instance, and filling the space with the fumes of tobacco for about half an hour. The box, for convenience, may stand in a shed, or in some unoccupied room with a window open. A weak decoction of tobacco can be made, of a strength to look like weak tea, and into this liquid the plants can be dipped. This course is especially preferable for some kinds of plants which are injured by much tobacco smoke. Cineraria is such a plant. Care must be taken to have the tobacco water not too strong. One of the best methods to destroy these lice on house plants is to use sulpho-tobacco soap—make a solution and apply with a syringe.

2. Earthworms in pots can be killed or driven out by immersing the pot of soil in lime water—letting it stand for half an hour or more. If some other kind of worm is meant, and one which cannot be got rid of in the manner mentioned, there is one way effectual, which is to mix together some suitable potting soil

and then stand it in the stove and subject it to a heat sufficient to destroy all life, and then use it in repotting the plants. This would be an extreme measure and seldom necessary.

3. Frequent syringing of the foliage and a moist atmosphere are the best preventives of red spider. The mouldy rose leaves should be dusted with flowers of sulphur, or syringed with a weak solution of sulphide of potash—a quarter of an ounce to a gallon of water.

4. A difficult thing to do.

5. There is very little difficulty in getting cuttings of most house plants to root. Cuttings inserted in a pot of moist sand and kept close by covering them with a bell-glass, or even a common tumbler, and standing in a warm and light place will root in a short time.

6. Seeds of Perennial Phlox need to be sown as soon as ripe, or soon after, as they quickly lose their germinative power. Moon Flower seeds can be soaked in water for a day or two to soften the shell, though they will come all right in time without this if the soil is kept regularly moistened.

7. Some varieties of fuchsias will bloom with proper treatment in the winter, while most of them can only with much care be made to bloom, except during the warmer months.

8. Freesia bulbs will keep all right if left in the pots where they have bloomed until they are repotted, in August or September. The pots may be plunged in the open border the latter part of spring and remain through the summer.

9. The bulblets may be taken from the tuberose bulbs, and in spring be planted out in the garden, where they will increase in size. Take them up before cold weather comes, and keep them warm and dry in the house until the following spring. If not large enough for blooming at the end of the first season plant them out again and grow them on.

10. Vick's insect exterminator will kill cabbage worms and keep off the fleas. Squash bugs may be picked off, or a

mixture of plaster and kerosene can be sprinkled on the leaves to keep them off.

11. A kerosene emulsion will destroy these insects.

12. Manure water is one of the best fertilizers for house plants.

THE CHINESE LILY.

Will you please tell us what we can do with the Chinese Sacred Lily to mature the bulbs when they are done blooming this season? Will they bloom continuously, or only throw up one set of flower stalks?
Mrs. G. C.

The bulbs will send up but one set of flower stems this season. When flowering has ceased, gradually lessen the daily supply of water, and when the leaves begin to turn yellow check it still further, and at length stop it entirely. In May the bulbs can be turned out of the pot into the garden border; or they can be kept dry in the pot until the middle or last of August, and then be set in the garden, or, if it is desired to try them again in the house, they can then be repotted in fresh rich soil; but this last course is not advised, as the bloom a second season will be scanty and small. Only strong young bulbs will give satisfaction in house culture, and the same is true in regard to all varieties of narcissus which have bloomed in the house, also, to hyacinths, tulips and crocus.

ROSE, LA FRANCE.

My La France Rose just beats all, it is simply glorious. It commenced to bloom the last days of May, and continued to blossom until frozen hard, November 15th; two buds tried to bloom December 1st. Some of the flowers in August and September were the largest I ever saw.

B. A. D., *Indiana.*

SOWING HAWTHORN SEEDS.

Will you kindly inform me if there is any way of hastening the germination of Hawthorn seeds, so that plants may be procured earlier than four years?
C. McL.

When the quantity of fruits or haws gathered from the hawthorn is small, the only way to prepare it for planting that we know of is to lay it away in a little bed in a shady place and cover it with soil, where it will keep moist, and leave it until the second spring before sowing. When the quantity gathered is large, as it sometimes is in England, when the sea-

son is fruitful, nurserymen mix haws with sandy soil in flat beds eight or ten inches in thickness, and by frequent turning the mass is not allowed to heat. By this process the pulp is more easily decomposed, and the shell of the seed softened and thus prepared for sowing and germinating the following spring.

THE JAMAICA EXPOSITION.

The Jamaica Exposition building was entirely completed on the 20th of December. Mr. LEE BAPTY, from the Edinburgh Exhibition is the manager, who, upon his arrival, and seeing the building, expressed his great surprise. He had no idea that we had anything so large, and no exhibition he had managed had so beautiful an appearance. As it was designed and built entirely by Jamaica workmen, we feel that we have already something to be proud of.

Exhibits from abroad are arriving by nearly every steamer. The principal applications for space are, from England 125, Scotland 30, Ireland 12, Canada 200, United States of America 50, Germany 37, Austria 5, Italy 4, France 3, India 1. The West India islands are represented by Jamaica, Barbadoes, Grenada, St. Vincent, St. Thomas, the Bahamas and Demerara (British Guiana).

The opening day is fixed for the 27th of January, and it is to remain open for three months. Prince GEORGE of Wales will perform the opening ceremony, and upon his arrival in Kingston harbor he will be saluted by twelve ships of war. The navies of France, Germany, Austria, Italy and Spain will also be represented. Probably the 27th of January will witness the finest sight ever seen in the West Indies.

Those of our American cousins who dread the sea voyage from New York by the Atlas line of steamers, which takes from six to seven days to reach Jamaica, may take the route by the Tampa line, which runs from Florida to Jamaica in two days. This route is especially adaptable for invalids who are desirous of escaping the terrible *mal de mer*, the sea being, comparatively speaking, as smooth as a mill pond.

Local exhibitions have been held with unvarying success throughout the island. At Montego Bay, although rain

prevailed during the two days, upward of nine thousand persons visited the show; neither has Kingston been idle in making preparations for her distinguished visitors. What with the reconstruction of our streets, pulling down of ruins and old buildings and erecting new ones, painting and improving the general appearance of our stores, the erection of a vast number of most picturesque suburban residences, and two large fine hotels in the city—the one at Myrtle Bank is practically completed, and the manager, Mr. McEvoy, arrived to assume his duties. Altogether, it may be said, that Kingston, at this moment, presents quite a new and most charmingly inviting appearance. Then, for the benefit and accommodation of persons who are desirous of seeing more of the interior of our beautiful island, considerable extension and a vast amount of improvement has been made on our railway, and some three or four fine large steamers have been chartered to carry passengers to and from the outposts during the time the exhibition is open.

In fact, nothing has been neglected, and every effort has been made to insure satisfaction to the most fastidious, and, if possible, to prolong the stay of our visitors, and I am sure that the delightful scenery, wondrous vegetation and invigorating temperature amongst our lofty mountains, combined with the proverbial sociability and hospitality of our people, will go far to convince our friends that no other spot in the world contains so many elements of prosperity, worldly success and happiness as Jamaica, and it is safe to say that only with regret will they leave our shores, and a life long impression of the pleasure and happiness they have experienced during their short stay in this earthly paradise.

WM. SPECK, *Kingston, Jamaica, W. I.*

PROPAGATING CAMELLIAS.

Do tell us, the readers of your MAGAZINE, how to propagate the *Camellia Japonica*. MRS. W. C. S.

The choice varieties of camellia are raised in different ways; some by cuttings, some by grafting, and some by inarching. When the last two methods are employed the stock used is that of the single red camellia. Amateurs will not be apt to succeed in propagating this plant. Those wishing to learn the whole

subject should purchase a small manual called *Camellia Culture*, written and published by ROBERT J. HALLIDAY, Baltimore, Maryland.

PEONIES FROM SEED.

In perusing your MAGAZINE, I find many things of value, but have ever failed to find the way to raise peonies from the seed. A few years since I accidentally found a few plants just coming up, self-sowed, and last year they produced a different flower from any I had ever seen. Two years ago I saved a quantity of seed and planted part in the fall and part the next spring, but no plant has rejoiced my eyes. What was the cause of my failure?

I have again saved a quantity of seed, both from my seedlings and others. How shall I proceed in order to get good results? Is it an uncommon thing for peonies to produce seed, else why does no seed catalogue speak of them? An answer will greatly oblige,
F. A. P.

Peony seed should be sowed soon after it ripens, for if left until spring it will seldom start. To manage it properly it should be sown in pots of light soil when gathered, and the pots placed in a cold-frame, where they can have attention as needed, such as shade from hot sun, water to keep gently moist, and in winter well protected by leaves or mats to keep out heavy frosts. In spring the seeds will start, and when the plants have sufficient strength they can be transplanted to the open garden and there receive proper cultivation.

PLANT QUESTIONS.

1. Does the Lemon Verbena need, in the winter, a warm or cool place, sun or shade, and does it grow winter and summer, and live on from year to year, like the *Heliotrope*?

2. How is the *Jasminum grandiflorum* treated in summer?

3. When should seed of *Cobœa scandens* be planted for blooming next winter?

4. Can you inform me why my Baloon Cactus does not bloom? The plant is more than seven years old, about eleven inches high, quite large at the top. I was told it would not be likely to bloom if branches were allowed to grow. I do not know the botanical name of the plant; the flower is something like the Night-Blooming Cereus. S. M. R., *Tracy, Conn.*

1. It is natural for the Lemon Verbena in winter to have a season of rest. With the approach of cold weather its supply of water should be shortened, when the wood will ripen and growth cease. Let it stand in a cool place until last of February when it may be brought forward again into a warmer spot, and as it commences to grow give water as required.

2. *Jasminum grandiflorum* in summer should be encouraged to make a strong

new growth, for it is on the new wood the flowers are produced. Usually the plant is cut down in the spring and re-potted in fresh soil, and then given a warm place with good light, and kept watered freely through the season, without allowing it to be checked. It can be trained on a pillar in the greenhouse or on a trellis. If it is desired the plant, during the summer, can be plunged in the open border, care being used to water it as necessary.

3. Seeds of *cobœa* planted the first of August should make good winter blooming plants.

4. This question cannot be definitely answered. Keep the plant pretty dry during the winter season and until the long days of March, and then again give water and start to grow.

BERMUDA LILY.

Can you tell me how to cultivate the *Lilium Harrisii*? Are the bulbs hardy planted out, where I live in Central Iowa?

A. B.

If A. B. will plant out the bulbs and protect them during winter by covering with leaves and evergreen boughs, he will get an answer better than we can give. The bulbs in the trade are nearly all brought from Bermuda, in August or September, and it is a great change for them to be placed in the open ground during one of our severe winters. In our own grounds they passed through last winter well, but it was one of the mildest ever known. We think with sufficient protection they may be carried through any winter. But these bulbs are almost wholly employed for winter blooming in the greenhouse, in pots or beds. Put two or three bulbs in a six or eight-inch pot, in autumn, keep them in a moderately cool and dark place for a few weeks, but when they begin to push their shoots bring them to the light, and keep them regularly watered. Keep in a rather cool temperature and bring them on slowly.

LATE BLOOMING ROSES.

On the second day of November I picked three fine rose buds (General Jacqueminot), grown in the open garden, which I gave to a young lady, who put them in water, and at her sister's wedding, November 5th, they had opened out nicely and compared most favorably

with the white and yellow Tea Roses, for it was the general inquiry, where did you get your bright red roses? In the last week of October we had both frost and snow. For out door growth and late fall blooming no rose, to-day, is equal to General Jacqueminot; all it wants is cutting back after blooming in June and July, good cultivation to cause a new growth, then the grower will be rewarded with rose buds, on and off, from September to November.

C. J. F., *Delaware.*

HIBISCUS IN WINTER.

I would be glad to have you write, in your MAGAZINE, something of the management of Hibiscus in winter. Can the plants be cut down, and will they live in the cellar?

E. A. B.

Supposing this question refers to the Chinese Hibiscus, it is proper to say that by mid-autumn its water can be slacked off and the plant allowed to go to rest, and in this state it may be kept during winter in the cellar. Prune back and re-pot it early in spring and start to grow.

APPLE-ROOT LICE.

It is claimed by the fruit-growers of Australia that the seedlings of the Northern Spy apple are proof against the wooly aphid in the form of root lice. A variety of apple known as the Winter Majetin, which originated in New Zealand, it is said, has the same resistant property, and the orchardists of those countries require that all of their trees shall be propagated on the stocks from those varieties. The fruit-growers of the west, where this insect is proving so destructive, as well as those elsewhere, will do well to note this information and test the truth if it.

FLORIDA ORANGE CROP.

The estimated crop of oranges the past year, in Florida, was 5,000,000 boxes, against 1,900,000 the year before. The present season's crop, it is thought, will be nearly the same as that of last year.

HYBRID FRUITS.

D. B. WIER, whose experience as a fruit-grower gives weight to his opinions, thinks that Hale's Early, Alexander, Amsden, Garfield and some other varieties of early peaches are peach-plum hybrids between the peach and the Chica-

saw plum; and that Wild Goose and Blackman plums, and some others, are plum-peach hybrids between the same species. He thinks the Mariana plum a plum-cherry hybrid between a Myrobalan plum and the Early Richmond cherry.

Mr. LUTHER BURBANK, of Santa Rosa, California, has many known hybrids similarly produced.

CACTUS-GLADIOLUS.

I have found much instruction in the questions and answers about plants and seeds in your MAGAZINE, and I would like to ask a few questions. I have a very large flat leaf cactus; the blooms are scarlet, and very large, but it has but few flowers. Should it be trimmed, and what kind of soil is best for it?

I planted a number of gladiolus bulbs, last spring, and only three of them bloomed. They were bulbs which were taken up the year before. Will you tell me why they did not bloom?

A. C. S., Baltimore, Md.

It would require some skill, acquired only by considerable experience, to prune a cactus in such a manner as to increase its blooming. As a rule, such a practice is not desirable. During all the cold season keep the plants quite dry to the extent of partial wilting. A good soil for it can be prepared by using equal parts of good strong loamy soil, leaf-mold, sand and old well decayed manure, all thoroughly mixed together. Be sure that the pot has good drainage. Potting can be done about the first of April, and then supply water and start the plant to new growth.

The vitality of the gladiolus bulbs may have been weakened by the manner in which they were kept through the winter; that is, they may have been too much dried out, and it took the whole season of growth for the plant to recover without being able to bloom. A temperature of 50° is high enough to keep the bulbs or corms, and the air should be only so dry that mold will not be apt to form. A very dry air with a high temperature is not suitable to keep them in.

GUARANTY OF SEEDS.

The Massachusetts State Grange proposes that seedsmen give a guaranty of the per centage of purity and germinating powers of seeds, and that a State inspector be appointed to make examinations.

We notice that the *American Garden*

and the *Orange County Farmer* consider such a course unwise. The latter publication tersely concludes:

"There is no real difficulty in getting good seeds if we will avoid irresponsible seedsmen and the Agricultural Department seeds at Washington. The reputable seedsman understands perfectly well that his success in business depends on the quality of the seeds he sells. He knows that a single batch of bad seed disseminated among his patrons will damage his business a hundred times more than his illicit profit."

The best thing, apparently, in the proposal is the inspectorship. The inspector would have a good salary, which the seed buyers would pay, and the benefit of it they would never know.

NAMING COUNTRY ROADS.

Mr. A. L. BANCROFT's scheme of naming country roads is being adopted in Contra Costa county, California. The committee appointed for the purpose have reported, and submitted the names for all the roads in the county, one hundred and twenty-one in number. Besides naming the roads, each farm or residence will bear a number, according to a method which will make it easy to find any place in the county. The system is to be known as the "Contra Costa Plan." Guide boards of sheet iron, painted white and with black letters will be placed at the road intersections.

The application of this system would be valuable in many localities.

PLUMS FOR FAMILY USE.

Judge MILLER, in answer to an inquiry from the west, names, in the *Rural World*, five varieties of plums for family use, the Wild Goose, Louisa, De Soto, Deep Creek and Lombard, all native varieties excepting the last, and that is supposed to be a hybrid between some native and some European variety. He adds, there are a number of others well worth cultivating if the curculio is only fought off. Prince's Imperial, German Prune, Jefferson, Columbia, Washington, Coe's Golden Drop, might all be grown if they can be protected from the little turk.

At the east the native varieties have never found much favor, and here if

asked to name five varieties, as above we might say Lombard, Bradshaw, Reine Claude, Coe's Golden Drop and Duane's Purple.

PARIS FLORAL TRIUMPHS.

Which of these favorites do you prefer, said the flower woman of the period who has a large establishment upon the Boulevard des Capucines, not distant from the market of The Madeleine which twice a week groans under the tyranny and weight of floral beauties of every color and clime. Tyrants! Because each more or less modestly demands the foremost regard and place; and to use the vulgar parlance, clash and seemingly make faces at each other if colors vary, and actually droop and die when in company foreign to their clime: even if transplanted from a temperate climate they sternly refuse to blend with a colder grown blossom.

Which do I prefer? I too questioned myself mentally, as roses, violets, hyacinths and every known blossom, heralded a perfume overpowering and sensuous. How can one select, I ventured to reply; but do not roses come first, as Queens of Beauty? Perhaps — but Dame Fashion declares they are commonplace, and not artistic; very gracious, but often too clinging, and too pale or too crimson; and chrysanthemums of the Japan sorts are the flowers most artistic and most desired. So I fell to studying this Chinese or Japanese favorite. Crimped petals indicate selfishness, exclusiveness. Watch one of the pink blushing sort! What hidden secrets in the cringing petals! What sensitiveness in the form, but often receding petals of the center or heart!

To the point: all table decorations are flat and I can see only hyacinths, tulips and chrysanthemums thrown on or laid on in squares. Roses never yet decorated a table to satisfaction. I mentioned in a former letter that mantels and doorways are wreathed with large flowers. Doors are taken down and the frame work made to resemble a bower of running vines, while small birds in invisible cages chirp away, dazzled by the electric light, making music at midnight.

Where do all the chrysanthemums come from? I am told that Nice sends the most beautiful specimens. These may be called the choicest, and are seemingly water

colored, so delicate seem their tints. Chrysanthemums are used to ornament churches, and the altars are decoratively designed by artists so as to produce the finest effects and present the flowers in their greatest beauty.

Soon the bell of Notre Dame will ring out the old and issue in the new year, and then Paris will be deserted for two months by all its votaries of fashion, who seek a warmer climate, and return with the birds to welcome spring. I will give you names of new flowers in my next.

ADA THORPE-LOFTUS.

AURICULAS.

Our colored plate this month represents several varieties of *Primula Auricula* raised from seed, and shows what may be obtained in this manner. Of course, every seedling is different, though many of them are much alike both in size and markings. When the plants bloom the best may be selected and afterwards propagated by division, thus giving a stock of the most beautiful kinds. Although many other plants are better suited to our hot summers, yet the auricula can be raised successfully if given a place where it will be in the shade after mid-day. The flowers are so beautiful, and with an odor so sweet, they are quite as worthy of attention as some others that receive far more care. If raised in pots, there is, of course, no difficulty in giving them the requisite shade, and they make beautiful plants, blooming the second spring from the seed.

The seed should be sown in winter, or early in spring, in well drained pans or pots. Use a light soil, make the surface smooth and sow the seed evenly over the surface. Cover lightly with fine soil, passing it through a fine sieve. Stand the pots in a warm place and keep the soil regularly moist, never allowing it to become dry. The seed will germinate in four to six weeks. Allow the plants to have a good light, and give air frequently to harden them. As soon as the weather in the spring will permit the pots can be placed in a cold-frame and there cared for. By May the plants should be large enough to be pricked out singly and potted, or planted out in a somewhat shaded place. Keep them well supplied with water during the summer, so that

their growth may not be checked. By the first of September those that are to be kept in pots will need shifting into larger pots, and their cultivation may be continued in the cold-frame until the weather makes it necessary to take them inside, where they should be kept in a cool part of the greenhouse. Those in the open ground will need to be well protected with leaves during the cold season to make sure of wintering well. In mild winters, and in mild locations they will pass the cold season without protection, but in the Northern States it is not safe to take the risk, for extreme cold will injure even if it does not destroy the plants. Like the primrose, of which it is a form, the auricula, in a climate well suited to it, such as that of the British Isles, need no protection whatever, and is even better and stronger for a full exposure. We expect yet to hear that this plant finds a congenial home in this country in some part of Washington, in the sheltered valleys near the Pacific coast. But the merits of the plant entitle it to more attention everywhere than it usually receives. It is one of the soul flowers, and when once we have known it, it is to love it forever.

A LESSON FROM THE DROUGHT.

The past season gave us the worst drought I have known in twenty years of Kansas life. By dint of mulching and concentrated watering, I saved more in my garden than I might have hoped for, but some things must go, I concluded, for the water was low in the wells. Of course, it was the annuals. But some of them surprised me by living on and even blooming occasionally, and hereafter my garden will always find petunias, salpiglossis and eschscholtzia; they are salamanders, beyond the enduring powers of geraniums and portulacas.

SILEXIA ENGLISH.

TUBEROUS BEGONIAS, LILIES.

1. Will you tell me whether seedling begonias and offshoot bulbs should be watered, or, like the old plants, be allowed a time of rest?

2. If the begonias die away, will the tubers shoot out again?

3. Should lilies, callas, etc., be kept entirely from water during the months of rest? Is it better to remove the bulbs from the pots, keeping them in a dry place, like dahlias?

C. B. S.

1. Small tuberous begonias should be

treated in the same manner as the large bulbs.

2. It is expected that the foliage will die away.

3. The better practice with callas that have bloomed in pots in winter, is to turn the bulbs of soil out of the pots into the garden border, and there leave them for the summer. But lilies may be left in the pots and plunged in the border until autumn, when they may have some of the top soil removed and fresh rich soil supplied in its place. If repotted once in three years it is often enough.

FIRST PRIZE POTATOES.

I believe I have never made any report to you as to the mode of culture, etc., of the first prize potatoes at the Illinois State Fair. I planted on the 1st of May, on very rich sandy loam, without manure. I cut my seed two eyes to the piece, and dropped single cuts fourteen inches apart in the row, and rows three and one-half feet apart. I commenced hilling up at the first hoeing, and think it is the best plan. From the four pounds of seed purchased of you I raised nine and three-fourth bushels of splendid tubers. Good rich soil, good seed and thorough cultivation comprise the whole secret in raising choice potatoes, so far as my experience goes.

RALPH HOGE, *Hubbardston, Mich.*

NOTES FROM A FRUIT GARDEN.

Marlboro and Cuthbert for reds, and Souhegan and Gregg for blacks, cover the whole season, and leave little to be desired in the way of raspberries.

There is little use in trying to raise more than one crop of strawberries from the same bed in an old garden, especially where barn-yard manure is used for a fertilizer. The effort to keep the weeds down costs three times what the fruit is worth, if the labor is hired. Plant a new bed each year.

Plant the gooseberries near the currants, for the worms will go on them first, and can be killed there. Hellebore dusted on the bushes in the early morning, while the dew is on the leaves, is all that is necessary to keep these pests in check. Dust when you see the first signs of the worms. Put the powder in an old

white stocking, which is worn thin and dust from it. There is no danger to man in eating the berries from bushes protected in this way.

Plant a few Clinton grapes among the other varieties, for the insect pests seem prefer to feed upon this vine. In our garden, last season, they molested this variety only.

If you did not manure the fruit garden before the snow fell, do it yet while the ground is frozen. Use fine manure that you can work well into the ground. If you can secure hard wood ashes and ground bone, they are the best of all fertilizers for grape vines, also for gooseberries and currants. Try them.

Try some of the dwarf Juneberries. They are said to be equal to currants, and coming at a different season should be of value for family use.

Plant at least a quarter of an acre in small fruits. Plant the bushes in rows eight feet apart, when they will be no more difficult to attend than a crop of potatoes. The fruit garden will make the farm more valuable, will make the boys and girls value the farm more, and will largely banish sickness from the family. Aim to plant such a variety, that with the products of the apple orchard, you will have fruit for the table every day in the year.

Wild blackberries range from July 1st to near the time of frost. Why cannot we have such a succession in the garden? We will in time. Several parties are claiming they have cherries with the season extending into late September, who will give us a select list from June 1st to October 1st?

When does the blackberry begin its new growth? We dug some in November, with what appeared to be new shoots. We have dug them in March with shoots several inches long.

We have planted a number of Russian apricots, and now good horticulturists tell us they are of little value. Well, we will test them for ourselves, and if they prove of no value here, will, after a good, fair trial, dig them out, plant something else where they stood, and tell our friends. Go slow on new varieties, unless you can afford to work for the good of the community in testing new fruits.

DR. G. G. GROFF, *Lewisburgh, Pa.*

UNRECKONED RICHES.

Whatever comes with power to bless
And melt the heart to tenderness,

To cheer us in our hours of gloom,
And bring us joy in sorrow's room,
To win the o'erworn heart from care,
And leave new hopes to nestle there,

To bring new light to wearied eye,
With sweet thoughts from the fount on high,
I count a treasure; richly worth
A cherished place and name on earth.

And though 'twere but a modest-flower,
From seed chance sown in idle hour,
The wind's low voice, the insect's lay,
The forest's sighing far away,
The kind hand clasp or heart warm word,
The tear by human pity stirred,
The aid bestowed with tender tact,
The playful fancy soft'ning fact,

A pure word from the poet's store,
An old tune warbled sweetly o'er,
A bee, a bird, or butterfly,
What'er the bright things chancing by,
If peace they bring in place of strife,
Or give the heart new love of life,
I count them treasures; and with these
The world is richer than it sees.

DART FAIRTHORNE.



OUR YOUNG PEOPLE.

RALPH'S CRISIS.

"I wonder what fool it was that said money is the root of all evil," bitterly ejaculated Ralph Ramsay, giving the fire a fierce punch and slinging the poker into its stand with a rattle and bang.

"Be careful, Ralph, how you speak," said his invalid mother; "come and sit beside me here, I want to talk with you."

"I don't want to be talked with," answered the frowning youth as he reluctantly took the seat indicated. "What fool was it, anyway," he continued. "You know there's not a bit of truth in the words. All the trouble that we have comes from the lack of money."

"*Ralph!* You don't know what you're saying. No one is responsible for just those words. An inspired apostle and philosopher once wrote to a beloved son of his adoption that—The love of money is the root of all evil. The *love of it*, you understand, the excessive love of money, not money itself. Your reckless words in such connection sound irreverent, and shock me."

"I didn't mean to be irreverent—didn't realize the source of these words. Your correction gives them a more rational meaning, but that doesn't help me out just now. Ever since the holidays there's been a panic in my purse, and now, when I need some money for a special purpose, it's completely collapsed. I've no way of earning money unless I quit school. If I do that I can't graduate this year."

"I can't understand, my son, what special need you have for money just now. Consider how many boys among those you know are less favored than you in that respect."

"O, yes, I do consider; but I don't see that my lack of money can help them any. If it could, that would be different."

"Stop right there, Ralph; if you were to get now the money you so much want, would that help them any?"

"Of course, not; I should spend it for what I'm needing it, right off."

"Then don't bring up so shallow an argument when thinking of worthy boys

who stand shoulder to shoulder with you in your classes, and who are less well clothed, fed and housed than you are, but try to realize that every indulgence of yours makes their own privations harder to bear.

"Look me in the eye, Ralph, and tell me truly: Do you think it is good for boys of your age to have every need supplied and continual indulgences added, without the least effort on their part?"

"I don't think it would hurt me any."

"O, Ralph, how trying you are!" and a suspicion of coming tears dimmed the tired eyes.

"But, mother, you know I can't earn anything yet."

"Then why not give up those extras? Your life has not been barren of pleasures. Your Uncle and I always remember your holidays and birthdays, and your social acquaintances claim you for their festivities. Unless you can practice a little self-denial now you'll be poorly fitted to withstand temptation when older."

"You know we are constantly reading of the criminal dishonesty of men entrusted with other people's funds, and it frightens me to think of the possible future of boys I know. Better they had not been born than that they prove themselves so weak as well as wicked."

"Weak?"

"Yes, weak in principle, which means weak in convictions, weak in firmness, weak in purpose, weak in integrity, weak in self-respect, and, last but not least, weak in honorable pride, a quality that of itself lifts a man above all desire to do a small or mean thing, making him loathe and scorn deeds that will not bear the light of inspection."

"O, Ralph, how I have craved for you, that you may become so fortified by correct ideas and habits as to make a man of robust character—one that no contact with the world can ever induce to waver or swerve from a true course. I'd willingly lay down my life to secure it, were that the alternative. And when I see

you in a mood like the present I am inexpressibly pained."

"O, mother, don't; you know I don't mean to worry you. Now let me say this—that if ever a mother was worthy of a noble son, you are. I felt it while you were talking as I never did before, and I will try to reach up to the mark, high as it is. . . . But, truly, do you think there'd be any harm in my having a little money, a very little, to spend this week?"

"Why, Ralph, when will you begin the self-denial that is to help mature your pliant boy-nature into sturdy manhood? You know the tender, succulent shoots of shrub and tree are not ripened effectually by warm airs and gentle showers, but by wind, cold and storms, until the sappy growths finally become solid wood.

"Thus, a certain amount of hardships and self-denials may develop strong fiber in a boy's character, capable of great resistance. You've read enough biography and history to know this, but unless you apply it to yourself, the experience of others will avail you little. I must read you a clipping taken from a recent discourse of a prominent speaker, who pictures the opposite side of the same idea, thus:

"'Rock that baby in a cradle cushioned and canopied; graduate him from that into a costly high chair and give him a gold spoon; send him to school wrapped in furs enough for an arctic explorer; send him through a college where he will not have to study in order to get a diploma, because his father is rich; start him in a profession where he begins with an office, the floor covered with Axminster, and a library of books in Russian morocco, and an armchair upholstered like a throne, and an embroidered ottoman upon which to put his twelve dollar gaiters, and then lay upon his table the best ivory cigar holder you can import from Brussels, and have standing outside his door a prancing span that won the prize at the horse fair, and leave him estate enough to make him independent of all struggle, and what will become of him? If he does not die early of inanition or dissipation, he will live a useless life, and die an unlamented death, and go into a fool's eternity.'"

"Gracious, he puts it strong."

"Yes, ideas have to be put strong in these days to wake people up. That

speaker's brain is alive. It teems with electric thought. Everything he presents glints with sparks, or glows with white heat."

"Well, of course, the principle is correct—yours and his—and after this week I'll begin a course of self-denial in everything that involves money outlay, except what you yourself shall suggest. Now, there's a promise. But its not in force, mind, until this crisis is passed."

"Crisis?" and the mother's instinctive fears are suddenly on the alert. "Is it possible, Ralph, that you're in some scrape?"

"'Scrape,' no, unless it's a scrape that a fellow's in when such a long-legged one as I am is cross as a bear because he can't get a little money without whining around his mother for it, or trying to tap his guardian. I wish Uncle Ramsay were not my guardian."

"That's a pity; he feels more personal interest in you through his relationship."

"That's the trouble; he's too prying. . . . Say, — mother, — can you remember, away back, the very first real fancy, tip-top, splendidous Valentine that you received—one that you knew had come from some real nice, tall chap — can you?"

"*Valentine?* And is this the —."

"Say—can you, and did it make you feel glad and happy?"

"I—I—Ralph, please get me a drink of water," she chokingly said. (The revulsion from serious to ludicrous was too abrupt.) With a rueful glance he left the room, while the mother's repressed laughter found a moment's expression.

And so this was the "crisis." *Her* boy, so short a time since in knickerbockers, it seemed, and now he had come to this. She had forgotten that her boy had to go through this stage, the same as he had to have the measles and whooping cough. But his returning footsteps warned her to let no word or look repel his confidence.

"You didn't answer me," he said, as she returned the goblet.

"But I will. Yes, I remember distinctly all about that first handsome Valentine. I was hardly out of my short dresses, but was tall and well grown, and had never received any but small, cheap ones until then. Its size and beauty quite electrified me. Besides, I knew the hand

writing of the superscription. It was that of a boy—yes, tall boy of about my own age. I thought him quite superior to any boy I knew; and, yes, I was pleased and very happy over it.”

“Was it from Papa,” whispered Ralph.

“No, indeed, I had never seen him then. Two years later my Valentine-boy seemed four years younger than I, and I had long ceased to care for him as an acquaintance. Young folks change, you know.”

Ralph flinched. “It isn’t always so,” he hastily declared. “I know young folks who are not changeable. But now I want to tell you what’s up. Our ‘set’ are going to have a Valentine party on the evening of the fifteenth. The girls are to bring all their Valentines, ugly ones and all. They are to be passed around for inspection and then all thrown into a basket together.

“Then St. Valentine is to appear in ghostly attire, with long, gray beard and hair, and proceed at once to decide which of the Valentines, including its motto or verses, is the choicest one of the lot. He will then call the owner forward, and, laying his hands on her head, will christen her St. Felicity (or other name), empowering her to dispense penalties to all who forget to call her by her new name during the evening, regardless of the games or other amusement in which they may be engaged. Before the old Saint is fairly done speaking he is to give a sudden start, and with long strides disappear. The company is not to know of his part in the entertainment until he appears before them. I am the only one in the secret and, of course, am expected to take part. Don’t you see my dilemma?”

“Yes, I see; but you know our recent unusual expenditures has left me rather short, and I can grant you no more money favors at present.”

“I know it; that’s what’s the matter.”

“I suppose you can take a note to your Uncle, from me, that will have the desired result. But the nature of your need hardly seems to justify it,” and she smiled at her son doubtfully, until he flushed.

“Botheration!” he exclaimed, hotly, “it’s a positive disgrace to be so pinched for a paltry sum.”

“Oh, not that. It teaches us to spend money wisely when we have it, so as to avoid another pinch.”

After a pause. “Well, write me a note, please, and I’ll shut my teeth hard and take it to my Uncle. Of course, he’ll catechise me until I feel like a goose.”

“You’d better be frank with him at first. Perhaps he’ll remember that he was once a boy.”

Fortunately, Ralph found his uncle alone in his office. He was fond of his nephew and looked sharply after his interest. After reading the note, he said, inquiringly:

“Another school book, eh?”

“Not exactly, other needs come up, you know.”

“Yes, yes; but some boys would scratch around and earn a dollar and a half on Saturdays, for extra spending money.”

“I know; but remember my invalid mother has no daughter, and expects special attention from me when out of school. However, I did look about, yesterday, for something to do—thought she’d let me off to-day, perhaps. But other boys have picked up the Saturday jobs, and, besides, I was only stared at for asking.”

“Hum; business men mark a chap like you when he asks for work—conclude he’s going to make something of himself after all. . . . About your mother—yes, you’ve been a faithful son to her, that’s so. . . . She thinks you’re needing this dollar and a half, does she?”

“Confound it! —.”

“Tut, tut.”

“Beg pardon, Uncle. But weren’t you ever a boy, and didn’t you ever want to send a Valentine to the best and sweetest girl alive?”

“Whew!” Then the uncle leaned his head on his hand, and with a far-away look in his eyes, said, slowly, “Yes, . . . I was a boy once, . . . ages ago, . . . and I did want to send a Valentine to the nicest girl that ever lived. . . . And what’s more, I sent it. . . . But, bless her sweet spirit, she’s under the daisies now. . . . Here, Ralph, my boy, is your money.”

He took it with a bow and a “thank you,” mentally ejaculating as he stepped onto the street:

“Yes, and I’ve earned it, too. I’d rather maul logs any day.

MARIA BARRETT BUTLER.

WONDERS IN PLANT LIFE.

NUMBER 2.

The cow-tree of South America, *Brosimum galactodendron*, is a remarkable tree. It forms large forests on the arid, rocky plains of South America, being the most abundant near the town of Cariaco, and along the sea-coast of Venezuela, growing more than 100 feet high, with a trunk six or eight feet in diameter, and without branches for the first sixty or seventy feet of its height. The leaves are of a leathery texture, strongly veined, and of a deep shining green color, about a foot long and three or four inches broad. This tree yields a copious supply of rich and wholesome milk, which is said to be as nutritious as that from the cow. Strange as it may appear, the cow-tree belongs to the same natural order which embraces the supposed deadly upas and the bread-fruit tree; it is but slightly removed from the order which includes the fig and the mulberry; the milky fluid of the trees of some species of the *ficus* genus is the source of our caoutchouc, or India-rubber. The bland and nutritious juice yielded by the cow-tree has been found, on analysis, to contain thirty per cent. of galactine, the analogous principle to lactine, or the sugar of animal milk. The juice is obtained from the stem of the tree by making incisions, and is collected by the natives in gourds. We are indebted for the first accurate account of this curious tree to Baron Humboldt. He drank of the milk at Porto Cabello, and described it as thick, gelatinous, bland, and without acidity, and possessing a balmy and agreeable odor. It is used along with cassava and Indian corn bread, and the natives grow sensibly fatter during the season when the milk is yielded most copiously. When exposed to the air a curdy matter separates from the fluid, which resembles cheese. The natives profess to be able to recognize in the color and thickness of the foliage the trunks that yield the most juice, as the herdsman distinguishes by external signs the milch cow. The milk from this tree is the principal food of the natives for several months of the year; they go as regularly to these trees in the morning for their supply of food as do our farmers to their cows.

The Artocarpus, or bread-fruit tree, of-

fers to the inhabitants of the South Sea Islands a valuable substitute for bread. It enables the happy Islanders, by the labors of a few hours in planting the bread-fruit, to fulfill their duty to their own and future generations, as effectually as the natives of less temperate climates, by ploughing in the spring time and reaping in the summer heat; providing for present wants and converting the surplus into money.

The bread-fruit is as beautiful as well as a useful tree. The trunk rises to the height of about forty feet, and a full grown tree is from a foot to fifteen inches in diameter. The branches come out in a horizontal manner, the lower ones about ten or twelve feet from the ground, and they become shorter and shorter as they are nearer the top. The leaves, with seven to nine lobes, are about eighteen inches or two feet long, and of a lively green. The fruit is about nine inches long, heart-shaped, of a greenish color, and marked with hexagonal warts, formed into facets. The pulp is white, partly farinaceous and partly fibrous; but when quite ripe, it becomes yellow and juicy. This fruit lasts in season about eight months in the year, during which the natives eat no other sort of bread kind. Such is its abundance that two or three trees will suffice for a man's yearly supply; a store being made into a sour paste, called *make* in the islands, which is eaten during the unproductive seasons. When the fruit is roasted until the outside is charred the pulp has a consistency not very unlike that of wheaten bread, and the taste is intermediate between that of bread and roasted chestnuts. It is said to be very nourishing, and is prepared in various ways by the natives.

This tree supplies other necessities as well; the timber, although soft, is found useful in the construction of houses and boats; the male flowers dried serve for tinder; the juice answers for bird-lime and glue; the leaves for packing and for towels; and the inner bark, beaten together, makes a kind of South sea cloth.

Nature supplies mankind with bed and bedding in the savage wilderness of Lycksele, Lapland. The *Polytrichum commune*, or great hair moss, grows luxuri-

antly in the damp forests, and is used for this purpose. The inhabitants choose the starry-headed plants, out of the tuft of which they cut a surface as large as they please, for a bed and bolster; separating it from the earth beneath, and although the roots are scarcely branched, they are, nevertheless, so much entangled as not

to separate from each other. This mossy covering is very soft and elastic, not growing hard by pressure; and, if a similar portion of it be made to serve as a coverlet, nothing can be warmer or more comfortable. If it becomes too dry and compressed, its former elasticity is restored by a little moisture. C. L. ALLEN.

EDITOR'S MISCELLANY.

PETER HENDERSON MEMOIR.

A memorial brochure of the late Peter Henderson has been received. It is written by Alfred Henderson, a son, and bears the following inscription:

TO THE MEMORY OF
MY MOTHER,

THIS MEMOIR IS LOVINGLY INSCRIBED.

The caption is,

PETER HENDERSON,

BORN IN PATHEAD,

DIED IN JERSEY CITY

SCOTLAND,

N. J.

JUNE 2, 1822.

JANUARY 17, 1890.

It contains an excellent likeness of Mr. Henderson, with a fac-simile of his last signature.

The main incidents of his life are narrated, together with his many services to horticulture.

It may seem superfluous to say that the writer of the Memoir has well performed his task of love, and that the friends and admirers of Mr. Henderson will prize this tribute to his memory.

STANDARD DICTIONARY OF THE ENGLISH LANGUAGE.

This is the title of a dictionary now in preparation, and to be issued by Funk & Wagnalls, Publishers, 18 and 20 Astor Place, New York.

First, it may be said that some of the best talent in the country is employed on the work. The names of such men as Julius H. Seelye, ex-President of Amherst College; Edward S. Sheldon, of Harvard University; Edward Everett Hale, Charles A. Dana and Howard Crosby, who pass judgment upon every new word admitted into the list, is sufficient guarantee of the care being used in forming it. The plan of the work in some important points differs widely from any other dictionary; 1st, the quotations employed are not only referred to their authors but to the name of the book and number of the page where found; 2d, the use of the scientific alphabet, adopted by the American Philological Association, to indicate the pronunciation; 3d, the placing of the most important current definition first; 4th, placing the etymology after the definition; 5th, in case of disputed pronunciation, giving the pronunciations of other dictionaries as well as its own; 6th, giving 50,000 vocabulary words more than are to be found in any other single volume dictionary. Specialists of the highest authority in this country are engaged on the different departments of the work, but these are so numerous our space does not admit of their mention. Dr. March, the philologist, of Lafayette College, has charge of the pronunciation and spelling. The publishers announce that the dictionary will contain 1100 pages each slightly larger than a page of the unabridged Worcester or Webster, and

will contain nearly 4,000 illustrations made specially for it. It is expected that the work, which is now far advanced, will be completed so that it can be issued the latter part of this year. Those interested can receive all necessary information in regard to the dictionary on application to the publisher, and advance subscribers to it will receive a special discount.

TALLEYRAND'S PORTRAIT.

The frontispiece of the February *Century* will be a portrait of Talleyrand engraved from a painting by Greuze, in possession of M. Chaix D'Est-Ange. The diplomatist is represented seated, and clad in the costume of the Directory. The extracts from the "Memoirs" in the February *Century* deal entirely with Talleyrand's personal relations with Napoleon Bonaparte. A number of anecdotes of Napoleon are repeated, and a conversation he had with Goethe and Wieland, at Erfurt, is given in full, from notes made by Talleyrand at the time.

BLACK BEAUTY.

The autobiography of a horse, by Anna Sewall, is one of those books which will be read with interest, and which will not fail to leave an impression on the character favorable to kind treatment of animals. A book that should be placed in the hands of children, and especially of persons having the care or use of horses; an excellent book for public school and Sunday school libraries. It is published by the American Humane Education Society. Send ten cents or twenty, and get it in paper or boards. 250 pages. Address George T. Angell, 19 Milk street, Boston, Mass.

CURRENT LITERATURE.

This excellent periodical commences the year in a new form—the usual magazine size. In this shape it is more easily preserved, a care which it is well worth. As a magazine of record and review it holds the field as its own. It gives the very cream of English literature each month, and at the same time makes its readers acquainted with the authors of the times and their doings. Price \$3.00 a year. Current Literature Publishing Co., New York.

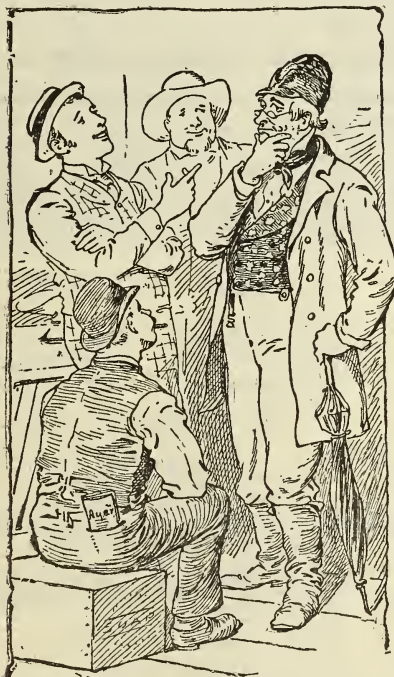
NEXT MONTH.

In next month's issue will appear a very full and accurate report of the interesting discussions held at the late meeting of the Western New York Horticultural Society.

Another article will appear in the March number on Hardy Everblooming Roses, from Theo. H. Mack, who contributed the article entitled "Hardy Roses All Summer" to the December number of last year.

BEST PROTECTION

"Yes, siree!" said Uncle Zeb, to the loafers at a country-store, "'t is pertection that's a-ruinin' this country. What we want is free trade—that's what we want." "Now, I'll bet, Uncle Zeb," replied one, "that you are a good protectionist, after all." "I'll bet I ain't! Come now, how be I a pertectionist?" "Why, you protect your system with



Ayer's Sarsaparilla

every Spring, don't you?" "Humph! Wal, yes, I dew; and I believe Ayer's Sarsaparilla is the best pertection a man kin hev—in the Spring or any other season o' the year."

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No premiums given on club subscriptions except as stated.

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These prices include the paper named and Vick's Magazine one year.

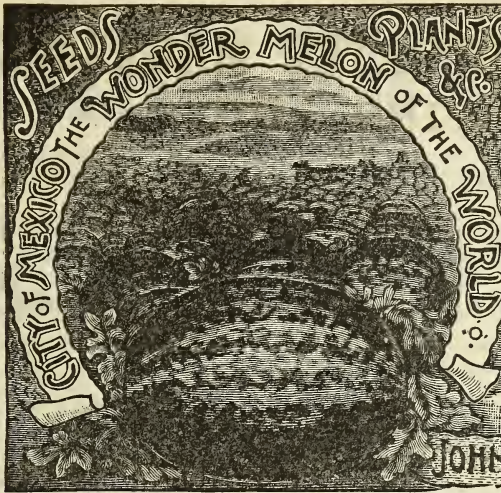
CALIFORNIA—San Francisco.	
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Christian Index and Southern Baptist	2 85
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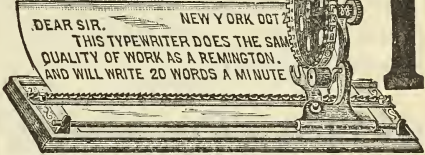
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For description of the new potato, "Vick's Champion," see *Vick's Floral Guide*, 1891.

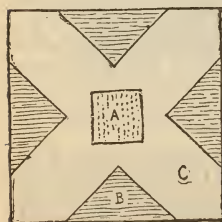
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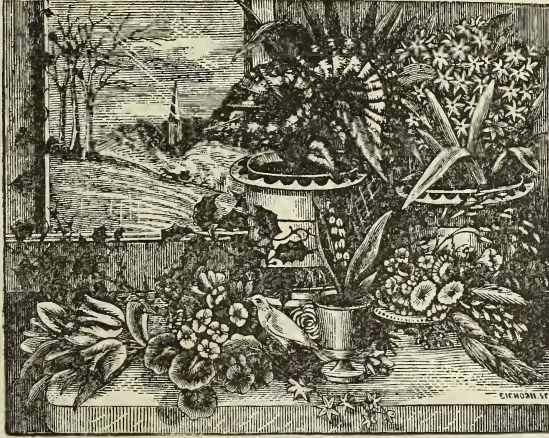
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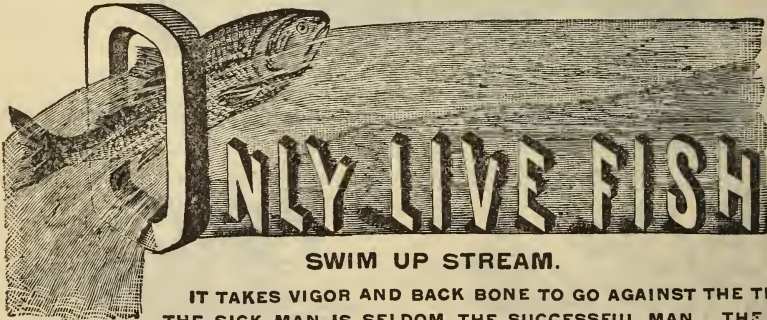
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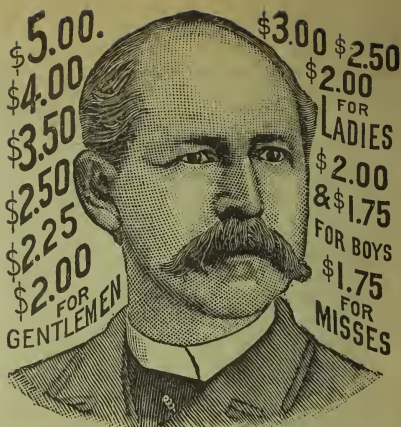
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Vol. 14.

No. 3.

VICKS
Illustrated
Monthly
MAGAZINE.

MARCH, 1891.

Published by JAMES VICK, SEEDSMAN, Rochester, N. Y.

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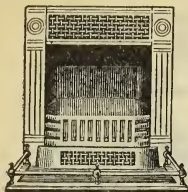
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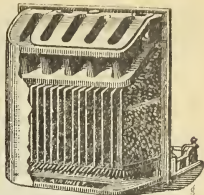
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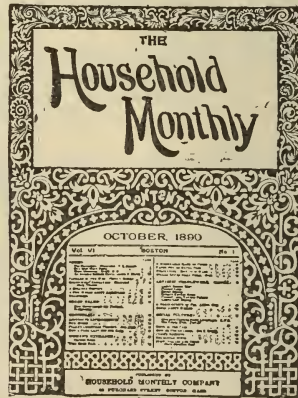
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MARCH, 1891.

THE question of parks for our cities is practically solved — they are demanded by the public, and now it is only a question of time and money or management until every progressive city, at least, will be supplied well or poorly, with public pleasure grounds. On the whole, we have but little fear that such grounds will be greatly lacking, either in necessary extent or proper equipment. Municipal pride and a wide spread intelligence in regard to ornamental horticulture of the leading minds of society, everywhere, will provide against shabbiness, both in the establishment and the care of city parks. Vicious politics may sometimes do dam-

aging work, but in a government such as ours, of the people and for the people, even such wrongs will in time be righted, for we have unbounded confidence in the deliberate popular judgment as well as in the power of its enforcement.

As a horticultural journal it is a pleasure to note the rapid advance that has been made by society in the last few years in regard to the subject here noticed, and with the pleasure of a

partly realized hope we rejoice in the prospect that our cities will become beautiful other than in brick and mortar and wood, and in a beauty of a higher order; for architecture, no matter how elegant or graceful in its structure is inferior in its pleasing effects to good displays of garden art. To this appreciation of gardening the most of our people are but partly educated, but enough so to make them desirous to know more, and year by year, in this city and that, we see unfolding broad areas of beauty

clothed in verdure and bloom and presenting the most beautiful specimens of trees and shrubs and their graceful groupings.

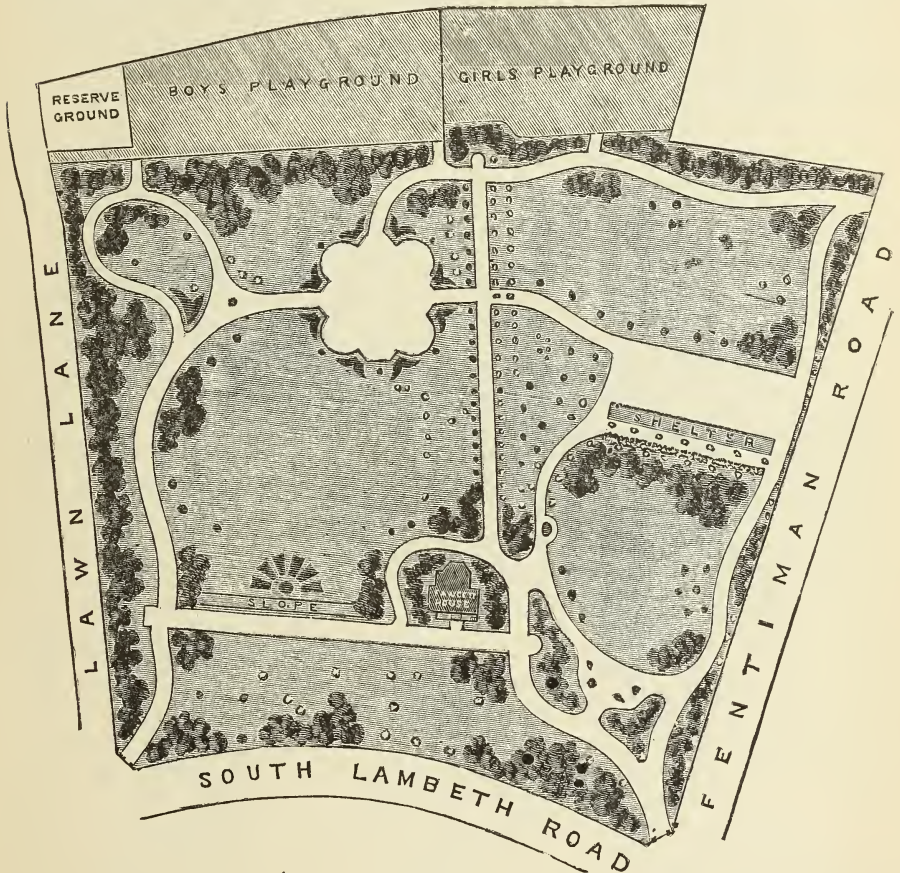
But it is not enough that cities should have these ornamental grounds. In these pages we have striven to incite the love of beautiful gardening in the country dweller as well as in the citizen, and especially to make pleasant the grounds surrounding the country school house, and the country church, and those of the rural cemetery. If this can be done, the improvement will not stop until every farm house and cottage is embowered in beauty. At this time we wish especially to consider the conditions of country villages, and to what extent public ornamental grounds may be desirable to such communities. Villages containing from five to ten thousand inhabitants have both the ability and reason to establish public ornamental grounds.

Let us briefly consider some of the reasons for the establishment of public grounds in villages : First, pleasant and handsome grounds of ample space, of easy access will be sure to be sufficiently attractive to become a common *rendezvous* whenever the opportunity is available. To spend a considerable portion of one's time in the open air is a necessity for the maintenance of a high standard of health, or such a standard as high as may be for each individual. The most usual form of locomotion must always be that of walking. In the ordinary village there can be no resort except to the streets or the outlying country roads. The latter are much of the time in a most forbidding condition for pedestrians, and especially for children and women, the ones most particularly to be benefited by such walks, since the male population, in great part by the necessities of occupation, secure the advantages of healthful exercise. As all of us know, who are familiar with village life, the one daily resort is the sidewalk, and usually, too, that of the busiest street, since here one is most apt to meet familiar faces, and is able to receive and give recognition, and occasionally to have a little chat and hear a bit of social news. But this meeting ground, though the best the place affords, has numberless disagreeable features. With business objects in view, one may travel the streets with unconcern for many things which are only too painfully apparent when one walks for pleasure. But besides the positively undesirable or painful sights one is apt to encounter on the streets, there is the greater fault of a lack of the beautiful, ennobling objects of nature. Thus to have one's life practically bounded by the pavements and walls of the village thoroughfare is to depress the mind and deaden the sensibilities of those who, in the ordinary walks of life, must make this their stamping ground.

Young children and nurses must have exercise, and for them the daily traverse of the streets become as monotonous and uninspiring as for others. How much more pleasing to pass through handsome grounds with various beautiful objects, and which change their attractions with the varying seasons, from the bursting bud of spring-time to the falling of the autumn leaf. In such a place the walks and driving roads would be traversed by those who, for the time being, at least, are partially relieved of their cares, and find a sense of refreshment in the pure air, the broad expanse of sky, the stretch of greensward, perchance a placid pond, the noble trees, the beautiful flowers, the flight and song of free birds, the nimble movements of squirrels, and other gratifying objects.

What more may not be said of the advantages which such a place may afford for young people, which are as necessary as they are desirable? There may be provided ample grounds for ball playing, which, perhaps, now is mostly indulged in in the middle of some street, with the disadvantage of small space, sometimes mud, often of injury to neighbor's houses or gardens. So, also, here may be provision for a number of games, at the same time, of croquet and of tennis; the boys can find a racing ground, and here, too, they may indulge in kite flying, an art dear to the boy's heart, but nowadays but little practiced on account of the obstruction of trees and the numerous electric poles and wires of telegraph, telephone and other purposes. If such grounds should happily be located by the side of a sufficient stream or lake, boating and swimming will be seasonable amusements. To add to these numerous uses of the village park, may be named those for open air concerts and popular meetings for speeches. All these ends are as much to be desired in large villages as in cities, and, what is more, they are quite as attainable in the former.

Suitable sites for parks are not difficult to find in close proximity to all, or nearly all of our larger villages, and usually such grounds can be purchased at comparatively low rates. If some portions of them are broken, and so less valuable for cultivation or for residence grounds, they are even more desirable for park purposes as affording opportunity for more varied treatment of surface. If a portion is covered with timber of native growth, that is an advantage; a variety of grades is desirable



PLAN OF A SMALL PARK.

rather than otherwise, but a piece of level ground can have every foot of it made available for ornamental or useful purposes. Native growths of trees, shrubs or herbaceous plants can be retained, and the artificial planting be made to combine harmoniously with it. What is desired is to develop the finest specimens possible of native vegetation, and to add to these the best acquisitions and productions of modern horticulture, and to group and otherwise arrange these objects so as to make a pleasing association of lawns, shrubs and trees; their manifold forms of beauty to be made apparent and heightened in effect by the manner of presentation.

The expense of grounds and planting of a park of ten to fifty acres is easily within the reach of every flourishing village community. The engraving herewith shows a small English park of about eight acres extent, formed from grounds which formerly constituted four or five residence places. It is not given here to be copied—that would be impossible—but only as a good example, containing fine features of arrangement and planting, and from which one may form some proper ideas of such a place. The effect of a well kept public park would be to make every householder more careful with his own premises, and so be the means of improving the whole village; with this would come a higher self respect, a nobler civilization.

WINTER ASPECT OF TREES.

Each season of the year has features peculiar to itself, which give character and distinctness to it that may not be mistaken. Winter stands in bold contrast to summer; and while spring and autumn take their appropriate places in the routine of nature's evolution, as harmonizers between these two extremes,

mantle of fleecy snow, all are full of beauty—beauties of startling contrasts, of quiet harmonies, of sunshine and shadow, of form and color, and of infinite blendings, subtle, indefinable, yet palpably present, and of which the thoughtful mind is delightfully conscious.

With these facts in view, then, it is to be expected that during the winter months there are many things to be seen which in the profusion of the summer's growth are hidden from view. If, for instance, we wish to become acquainted with our native trees, what an excellent opportunity is given us at this season to study their forms, their habits of branching and the effect of wind and storm in their growth. Such a study will prepare the mind for a more intelligent observance of their development in spring, their summer bloom and fall fruitage, and thus an individual history of our trees may be gained during one year's careful investigation.



White Oak—*Quercus alba*, L.

yet spring and fall are also sufficiently dissimilar from each other to be easily recognizable independent of any printed calendar.

While these broad facts are apparent to the most casual observer, they are much more so to the student who takes special note of nature's unfolding, and to such an one this ever varying aspect from winter to the flush of spring, thence to the full bloom of summer, and on through the maturity of autumn, to be closed for a time with the hush of winter, when the earth's teeming myriads rest under a

THE OAK.

Live thy life,
Young and old,
Like yon oak,
Bright in spring,
Living gold;
Summer—rich
Then; and then
Autumn—changed,
Sober hued,
Gold again.
All his leaves
Fall'n at length,

Look, he stands,
Trunk and bough,
Naked strength!

TENNYSON, 1889.

Behold the oak! Its sturdy structure and massive frame-work bespeak a monarch among trees, not, perhaps, the giant in size, but a veritable type of rugged endurance; see how he flings his brawny arms abroad, knarled, twisted, sinewy, muscular. That such a tree should have commercial value, and be utilized where strength and toughness is needed is not to be wondered at. Hence the oak fur-

nishes the timber *par excellence* for all structures designed for endurance. The growth of many seaport towns, where ship building is the chief industry, is due originally to the proximity of large tracts of oak forest, the timber of which is better adapted than any other to bear the immense strain which vessels are continually enduring as they traverse the open seas under every condition of weather, freighted with the precious cargoes of the nations.

Nor is the oak lacking in other respects, for when sawed, trimmed and polished, its handsome grain and color give it first rank among fancy woods, so that it forms the choicest furniture of our day, and has been in favor for such purposes from very early ages. The grain of polished oak is an admirable feature in all cabinet work.

There are two score or more species and varieties of oak recognized as natives of America; the white oak and its allies are the most in demand for the excellence and durability of their timber, while the swamp oak is extensively used for fence posts.

The winter aspect of the oak is quite distinct as a genus from other trees, as may be seen in the accompanying illustrations; but the different species are not readily discernible in their frame work alone from each other, for, while they maintain their distinctive character, as a whole, they vary considerably in minor details, even in the same species.

THE ELM.

Artists generally do not care to introduce the elm into their pictures; its symmetrical form is



Scarlet Oak—*Quercus coccinea*, Wang.

thought to be too precise, and the foliage does not give masses or breadth of color, that some painters love so much. While this may be true in regard to one phase of art, yet it is also true that the elm is particularly beautiful after its kind, and has a charm of outline distinctively its own; how prominently it stands out in the open landscape, no less in summer than in winter, and how readily we recognize it as far off as the eye can reach, as it throws its gently spreading arms upward from the bole to its circumference. Note the graceful bending of the branches till they assume the pendent form, and bearing from their extreme tips the pensile nests of the golden oriole, reminiscences of last year's gaily colored melodists. We have noticed the remnants of no less than three such domiciles on one fine old elm in our neighborhood, possibly the structures of the same pair of birds or their progeny, as these cheery visitors are apt to return year after year to the same garden spot, and often to the same tree.

The wood of the elm is hard, and from its interlacing, fibrous texture, is extremely difficult to split, and is, therefore, useful for making wagon hubs and in ship build-

ing. Mr. NEWHALL, in his book on the *Trees of Northeastern America*, relates this interesting story: "One day I found four men in a stone quarry, working with iron bars and rollers over a heavy flat slab. They were moving the stone slowly up a narrow plank into their cart. 'JOHN,' I said, 'I would not think that board could hold a stone of such weight two minutes. Is it hickory?' 'No, sir,' said JOHN, 'that's an elm plank; it can't break.' It did not break."



Black Oak—*Quercus coccinea tinctoria*, Gray.

will watch the growth of the little sapling elm from the seed, it may be seen that, instead of the sturdy, upright growth of the oak, it is bending, willowy, soon inclines to one side and then at a point on the stem where it commences to bend over, a bud starts to grow and continues the stem upward until, in its turn, the new growth bends over and another bud breaks and carries the growth on upward, and we find the main stem is a column of superposed branches rather than a continuous growth of the terminal bud of the original seedling stem. Does this mode of growth by successive overlapping of layers of woody fiber conduce to the toughness of the timber? The wood of the oak has greater hardness and density, but less toughness or elasticity. It is the peculiar mode of growth of the elm which favors its numerous branches, and which appear so conspicuously in the winter season as a network of small branches and twigs.

The elm forms a peculiar characteristic of American scenery. It is much employed as a shade tree, and one of the most unusual experiences to a foreigner is to walk through some of the principal streets of our cities under an avenue of elms, high arching, and yet not sufficiently dense to prevent the sunlight filtering through and lighting up the vaulted space.

What is called the corky white elm, *Ulmus racemosa*, Thomas, is common in this part of the country, as it is also in the Province of Ontario and in the region westward to Nebraska. It does not make as tall or large a specimen as the American elm. It may usually be distinguished by the bark of its branches having corky ridges. The wood of this species is even tougher than the last, and finer grained and heavier, and is really the most valuable of all elm wood for purposes requiring toughness and strength. Is there anything in the mode of growth of the elm which is so conspicuous in winter, that causes this remarkable toughness of its wood? Notice how its limbs separate from the main trunk, and then how, in the same manner, these divide into branches, and these again into smaller ones, until they terminate in twigs. A mode of growth termed by the botanist *deliquescent*. If you

THE APPLE.

Who of us in the country does not remember the old apple tree in the front doorway, where, as children, we delighted to sit, two or three together, on its outspreading arms? How we stood, at times, on those sturdy limbs and wondered at its roomy

center; here, too, when childhood days became a thing of the past, this same old tree—heirloom of the family—became the *confidante* of plighted love. Anon, maternal cares found solace beneath its perfumed blossoms, and the aged pilgrim a peaceful quiet in its grateful shade. One by one our darlings have gone out from the home roof, yet the grand old tree remains, and around it cluster the precious memories of the home in by-gone days.

But there are other associations which lend a charm to this dear old tree, for it is the favored haunt of our familiar friends, the birds. The robins love these old trees, building their nests in the clefts of the spreading branches; the king-bird, also, often saddles his nest far out on the horizontal boughs, and should there



White Elm—*Ulmus Americana*, L.

be a dry or withered branch it at once becomes available for the lichen-covered nest of the pewee; the chipping sparrow finds room for two or three nests, and even the humming-bird is tempted, by the social aspects of such a tree, to make his tiny dwelling there.

What more beautiful sight than an apple tree in full bloom, its blossoms having the daintiest tints of the rose and its most delicate perfume. With its boughs bending under a weight of bright red fruit is it less delightful? Its rounded top and depressed branches bear silent testimony in winter to the loads it has carried.



Apple.

"Woodman, spare that tree,
Touch not a single bough;
In youth it sheltered me,
And I'll protect it now."

HARDY BLOOMING ROSES.

It seems that my article in the December number has struck a popular chord, as I have had letters from various sections, as well as repeated calls from the editor, for statements of methods of culture, names of best varieties, etc.

I lay claim to being only a beginner in the study of the rose in general, but my few years of the charming pursuit have been directed to the one focal point of securing a line of really ever-blooming roses, that in the climate of Sterling, Illinois, one hundred miles west of Chicago, where the winter temperature varies from thawing weather to 30° below zero, will be hardy enough to live and thrive entirely out of doors the year round.

The term hybrid perpetual, applied to more or less hardy varieties of roses, is a misleading one, causing many to suppose, as I once did, that roses so named were perpetual bloomers. In this search for truly perpetual bloomers I have tried many varieties that prove to be excellent June roses—little or nothing more. One catalogue, met with in my early experience, had the honesty to say that Madame Plantier was not a true hybrid perpetual, as it bloomed but once a year. But why was this said of that one variety, when Jules Margottin, Madame Alice Dureau, Charles Duval, Magna Charta, and a host of others of the so-called perpetuals, never bloom but once—at least, never have for me; and others that are nameless I shall throw out as fast as the room is wanted for tried and true ever-bloomers.

Although I am in the business for the supply of the local demand for these tested ever-bloomers, I will give away the whole secret for the benefit of the readers of VICK'S MAGAZINE and its proprietors, who have kindly given me space to air this interesting subject.

The leading varieties that have proven to be true perpetuals with me for several successive years are as follows:

First, my old favorite, which is, doubtless, Mad. Chas. Wood, as claimed by L. S. LAMANCE and others, and the Dinsmore, which promises equally well, though not tested so many years. These are very strong growers very large, very double, brilliant crimson roses, blooming in clusters of three to a dozen on the

ends of the canes and branches all the season from June to November. Next in constant and profuse bloom is the rather dwarf growing Madame Alfred de Rougemont, flesh white, cupped, and a beauty. Albane d'Arneville is more nearly clear white, more globular, but hardly as profuse a bloomer, though a stronger grower. Charles Darwin is a very dark, velvety, black-red rose, buds and bloom equal in form to "Gen. Jack," and most of the teas, and blooms repeatedly through the season. Mrs. John Laing produces magnificent soft rose-colored bloom, singly, on erect stems, all summer; but owing to its habit, above stated, is not a profuse bloomer. It is a great keeper, the bloom remaining perfect a long time. Baroness Rothschild is an ideal rose in form and color, light rose color, globular, and, so far as tested, I believe it to be, when well grown and established, a reliable ever-bloomer. Gen. Washington is a good crimson rose, and blooms repeatedly through the season. Another red rose of great beauty, of which I never had the name, has been a fine June bloomer, with scattering flowers during the summer, when it gave repeated series of bloom. Another, for which I know no name, of vigorous growth, never bloomed at all till some five years old and then but sparingly; but last year it bloomed all summer, giving us charming buds and roses, borne in racemes on long, graceful stems, color bright rose-pink. If its ever-blooming habit is established by another year's experience, I shall call it a gem. La France is not as hardy as the foregoing, but can be grown with like treatment, and it is, perhaps, the queen of all the roses, shell pink, of perfect form in bud or flower, very fragrant, and a profuse and constant bloomer.

I will not attempt to speak of the half-hardy or tender roses this time, or this article will be too long. I have Glory of the Mosses, pink, and a white moss with very thorny (soft thorns) wood, and rough, sticky leaves, blooming in clusters and very mossy, of which I never had the name. They are beauties; but not ever-bloomers, and I know of no mosses that are. If anybody else does I should be glad to hear from them.

As to methods of culture, there is,

probably. little that is new in what I can offer. My beds, except a nursery for cuttings, are cut into the sod of the lawn. Sometimes I have turned under manure in making them—sometimes only the sod. I dig around the borders when necessary to keep the grass from encroaching, and keep the ground clean as for any other flowers, by hoeing and weeding. In the spring the bushes are well trimmed, and all weak wood cut out. In some cases the wood will be mostly killed down nearly to the ground, when it should all be cut away. The bloom all comes on new growth, and the best crops are often on entirely new canes thrown up from the roots below ground. Through the spring and early summer I watch for bugs and worms, and on the first appearance of the leaf-eating slug I dose him with slugshot (hellebore is said to answer the same purpose), when the dew is on, and a few applications finishes his career for the season.

The few rosebugs that have ever bothered me have met an untimely end by getting between my fingers. I think it is best to cut back pretty well in the fall—say October—and not let the plants bloom much quite late in the season, thus saving the strength to sustain root and plant through the winter. The only covering I have used so far is the autumn leaves falling from fruit, shade and ornamental trees and shrubs on the premises. These are raked up in November and piled among and around the bushes. A little brush will hold them from blowing away if winds are strong before the leaves get settled. In the spring I take off the leaves when growing time begins, leaving a few only for mulch. I keep track of my varieties by making a map of each bed, with an arrow pointing north, and locate and name each plant as towns are shown on a map. Stakes and labels are unreliable.

THEO. H. MACK, *Sterling, Ill.*

COLEUS.

Some may not admire these foliage plants, but I admit I do not belong to that class. They have always been my favorites, and perhaps they are common, and you would much rather have some finer and more expensive plant. You may, but I will not do without a goodly shelf full of them in winter, and a whole bed of them in summer. The top shelf of my bay window is devoted to them and an immense heliotrope. I rooted them in August, because they root so easily then, they revel so in heat. I pinched the cutting back when I first put it in sand, and I continued to pinch until I had a stocky little bush of it, which it attained by the time it was ready to go into winter quarters.

I allow them to grow to the window, that is, I never turn them unless I am expecting company, and then what a show they do make. Everybody says, "How lovely your coleus are. I never have any luck with them." As if there was any such thing as luck in floriculture. I know full well luck has nothing to do with their beauty and luxuriant growth. They are very sensitive to cold, and a chill will spoil their beauty, for the leaves will drop. They have such diversity of

colors and markings, and each leaf seems different from the others. I know of no plant possessing such varied coloring. We often read, "No use to try to grow them outside a greenhouse or warm conservatory in winter," but I know they can be grown well in a sitting-room heated by a wood stove.

I have grown them eleven years, so I know whereof I speak, and feel as though I had some little experience with them. Old Verschaffelti is one of my favorites. Spotted Gem another, Shah, Mrs. Geddes, Golden Bedder and several whose names I am unacquainted with, but equally pretty. I saw some new ones, last fall, in visiting one of the city greenhouses. They were just grand, but I did not find out the names, as the proprietor was absent. I enjoyed looking at them, but it was so hot in that particular greenhouse that I was anxious to get out and try looking through a cooler one. This time it was the carnation house. Were they not sweet?

Well, back to the coleus again. When potting them I give them quite a good deal of sand; indeed, I grew one pot of them, one year, in sand entirely, in an old tin fruit can painted neatly. They

must not have a rich soil, I do not think the coloring is so fine. Have the drainage perfect; indeed, this should be for all plants. Charcoal is nice for the bottom of the pot. In the spring I root them by the dozen, have enough for myself and all my friends (those who don't have luck with them, you know). I always have a bed of mixed varieties, and a fancy bed is nice. Make a star of Golden Bedder,

and fill in with Verschaefelti. Be sure to have the points to the star well defined. The soil into which they are planted is plentifully strewn with sand. I am never in a hurry to bed out coleus. June is plenty early enough, as they may get a chill, and then my beautiful bed would be robbed of its beauty for that season. No, there is nothing takes the place of coleus for me.

M. R. W.

CAROLINA WILD FLOWERS.

NUMBER III.

There is hardly a day in the season from April until November, when to one who knows the woodlands well some one of the *Silenes* is not visible, either the brilliant, flaming shoals of scarlet and crimson Catchflies, or cool snow white banks of Starry Campion, with many shades of pink and red between.

Early in April, as a family herald, comes *S. Pennsylvanica*, the wild pink, brightening with gay, clustered, short-stalked pink flowers the open sandy hillsides near every little stream. The flame of *S. Virginica* is brighter. The same bright, deep, clear scarlet which one sees in the cardinal flower in autumn, *sans* the rich velvety look which gives the prelate such distinction. But this fire pink is a beautiful blossom, more graceful than many of its relatives, as its stems are longer, and its loosely cymose flowers, bending and waving with the tall billowy meadow grasses as the wind sweeps across, and gleaming out like fiery stars, make a sight to be remembered. *S. regia* and *S. rotundifolia*, both scarlet, with large and showy flowers, are rarer than *S. Virginica*, and all are noteworthy and easy of culture, if transplanted to the garden. They will not grow in deep shade, but love a fair amount of sunshine and a rich, sandy soil. It is the viscid exudation on the stems and calyx which gives to these flowers the name of catchfly.

I have been searching every bleak, cold mountain top and side for *S. acaulis*, the moss campion, but cannot find it. I suppose it is too warm for it here. Now and then it is to be found in some sweet old time garden, a cunning little cushion of evergreen, tufted like moss, with thick linear leaves, two or more inches long, and dainty white flowers.

Flecking the mountain sides like fallen patches of blue sky come in early spring a troop of irises. The dwarf ones love the high, dry mountain sides, you will find that the taller, more stately and showy ones love low wet places and swamps. But it is *la petite* which carries the perfume always, and nothing could be daintier or sweeter than pretty little *Iris verna*, with its linear grass-like leaves growing thickly over and about shelving rocks. Its violet blue divisions of perianth vary in color, often they will be almost white, with pale yellow markings at the throat, sometimes the falls will be purple with orange-yellow base, and violet standards, but usually its uniform color is violet-blue, with falls a little deeper than standards and throat a rich orange. Its perfume is delicate and captivating, and I would love to be a herd-boy on these mountains in early spring, to sleep away my days in some spot of sunshine, upon beds of sweet fern and blue iris. That would be my idea of *dolce far niente*.

I. verna is my favorite, but *I. cristata* is also dwarf and beautiful, with crested falls and corolla larger than *I. verna*, (*I. Caroliniana*—Pitcher and Manda's novelty.) *I. versicolor* and *I. Virginica* are too well known to need a recapitulation of their beauties here, but *I. cuprea*, our yellow iris, does not seem to be well known. It blooms in May and has a stout stem with sword shaped leaves, and its flowers vary in color from bright yellow to reddish brown. It is beardless, has a cylindrical perianth-tube, and the divisions of the style are petal like. To grow in the center of a round mass of native dwarf iris is wonderfully pretty.

Our earliest and largest violet also loves the open woods and mountain sides, and

is the near neighbor and rival of *Iris verna*. This is *Viola pedata*, so called, perhaps, from its pretty three to five divided leaves which fancy may liken to a bird's foot. Its corolla is widely open, like a pansy, with smooth beardless petals, the stamens and stigma forming a conspicuous bright orange dot in the center of the

deep, lilac-purple flower. I sometimes hear the children call this "wild pansy," and we truly have not any in our gardens more beautiful. The flowers measure one and a half inches across sometimes, and vary in color from white to deep purple. This species is worth growing both for flower and leaf. L. GREENLEE.

THE VERBENA IN THE GARDEN AND WINDOW.

The verbenas are among the "must-haves" for the garden. It seems like an old friend, and a garden without verbenas is but half a garden. It will bloom without stint from June until after quite severe frosts, provided the soil is light and if possible slightly sandy, is good rather than poor and there is a daily cutting of the blossoms. Allow no seeds to form, if possible allow no blossoms to fade, and the plant will send out runners in all directions, each freighted with buds and blossoms.

They seem to rush and hurry along out of your reach, apparently, where they can have an opportunity to form seed. Very many people will say the same ground must not be used twice for verbenas, in other words, the verbenas beds must be in a new place each season. This has not been my experience. I have had the same spot for my verbenas for years in succession and my verbenas were as fine the fourth year as the first.

Each season I allowed a few of the finest plants to ripen a few seed, that sowed themselves, and some of the seedlings thus obtained were far superior to their parents or grandparents.

Verbenas are very cheap, but for those who prefer to raise their own plants the following method will be found effectual:

First and most important, make sure your seeds are new. Sowing old verbenas seeds is a thankless task for they will *not* germinate. Sow verbenas seeds as early as March. If you have no hot bed, manufacture a miniature one as follows: Take a box or pan and in the bottom put a layer of quite fresh horse manure (for bottom heat). Over that a layer of sand or gravel, then fill your dish with finely pulverized, somewhat sandy, soil.

Make smooth, and moisten very thoroughly, but do not drench the soil. Make tiny furrows about an inch apart and

plant the seeds quite thickly. Cover lightly with damp soil and press down firmly with a bit of board or the hand.

Now wring from warm water a piece of flannel to cover the seed, by keeping the flannel damp all the time the soil will be kept moist, without an occasional soaking, which is quite apt to wash the seed out of the ground. Set seed box or pan in some warm place, keep the flannel cover wet and after a week watch for seedlings. As soon as the tiny plants appear the flannel must be removed and sunshine and air given the new seedlings. If convenient keep a glass over the plants for a week or ten days, but keep it slightly raised most of the time or the excessive heat and moisture will cause your young plants to damp off. While you must guard against too much moisture, it is just as essential to see that the plants are not allowed to get too dry.

It requires "lots" of care and patience to successfully raise enough seedlings for your own and your friends' gardens.

If your plants come up well, they will, by the time they are an inch high, be getting too thick to grow freely, and a part of them should be transplanted to other pots or boxes. As soon as the weather will permit, they should be gradually hardened, preparatory to the out-door life to come, by being placed in a cooler room and from there out of doors during the day.

To cause the seed to germinate, heat is essential, but too much heat weakens the plants.

Verbenas can be bedded out quite early in the season without detriment, provided they have been through the hardening process referred to. I got mine into the ground so early one year that they were completely hidden from view by a belated snow storm. I did not see that they received the least injury thereby, though I

felt a little anxious when I looked out in the morning and saw the "beautiful snow" had dropped such a fleecy white mantle on my flower garden. In bedding out "a situation where the morning sun will not strike them before the dew is off in the morning is best, as this is one cause of the mildew or rust which so frequently saps the vitality of the leaves," so says a good authority on floriculture. The same authority also states "as a house plant the verbenas are not a success."

My own experience contradicts both these statements. My many verbenas have one and all had the full benefit of the morning sun, and I have never yet been troubled with rust or mildew. I have always had good success with the verbenas as a house plant, and will give my method of treating later on.

If your seedlings make a growth of five or six inches before it is warm enough to bed out, they should have their tops pinched off, which will cause them to branch freely. When transplanted the stalks should be carefully bent and fastened to the ground. Hairpins make cheap and effective fastenings, or small round sticks, five or six inches long, can be split nearly the entire length and a tiny bit of wood inserted in the cleft to hold the sides apart, can be used to peg down verbenas or other trailing plants. Or often a little flat stem or a handful of earth will serve to hold a stalk in place until it is firmly rooted, which under favorable circumstances will be in about a week.

If it should happen that a plant branches too freely and forms too thick a mat, cut out a part of the plant, and the remainder will grow and blossom better.

If you would have verbenas in the window in winter, it is necessary that you should begin in August. Sink some pots

in your verbenas, fill them with soil, and in each pin a joint of verbenas; keep well watered, and after a few weeks sever from the parent plant. If the part left in the pot is larger than you want to take into the house, cut it back to suit yourself.

Gradually accustom these plants to the house. It is quite as bad for a plant to bring it directly from the open air, in the cool weather of autumn, to the overheated air in our living rooms, as it would be in spring to rush the plants directly from the warmth of the house to the damp, chill atmosphere of the garden.

The life of many a beautiful plant has been sacrificed by thoughtlessly submitting it to such severe extremes. As soon as your verbenas are thoroughly accustomed to the house give them the sunniest window, and let them have a place just as near the glass as possible. Don't allow them to get *dry* and don't keep them deluged with water, and if they appreciate your care as they ought to, they will be in blossom by the holidays. If they get "lousy," tobacco smoke or a bath of tobacco soap suds will "fix" them all right. If the plants thrive and branch freely, you can in February or March take off cuttings enough to stock your own garden and make glad the hearts of many friends. If you look carefully along the stalks and at the joints of the plants you will see little protruberances, which are sometimes called "eyes." In taking your cuttings be sure and get pieces with two or more "eyes," for they are nothing more or less than the points of roots that only want congenial surroundings to start them into growth. Cuttings having "eyes" will, if placed in bottles of water, strike roots in three days, sometimes sooner

DOROTHY LINCOLN.



FOREIGN NOTES.

POT CULTURE OF GRASSES.

A correspondent of *The Garden* advises growing some kinds of grasses in pots to be used as a means of relieving the masses of color of the bloom of greenhouse plants during the summer season. For this purpose the seeds can be sowed from January to March, according to latitude, the latter month is early enough in the Northern States. The plan preferred is to sow the seeds not too thickly in the pots where the plants are to be grown. Pots of five or six inches in diameter are handier than larger ones. One piece of broken crock over the hole in the bottom of the pot will allow drainage sufficiently. Some loam with a small addition of old manure and sand will make a suitable soil.

Plenty of air should be given to the growing plants to make them as sturdy possible. A little support, however, will be needed, and this can be provided by inserting four light sticks in each pot, and fastening a stout thread around the top of each. Plenty of water will be needed as the pots become filled with roots. Some of the best grasses for this treatment are *Agrostis pulchella*, *A. nebulosa*, *Briza maxima* and *B. minor*, *Hordeum jubatum*, *Lagurus ovatus* and *Bromus brizaeformis*. These grasses are all valuable for cutting to mix with cut flowers, but for this purpose the seeds can be sowed in the open border. To the varieties named above may be added *Chrysurus cynosuroides*, *Pennisetum longistylum* and *Trycholæna rosea*.

IRRITATING PLANTS.

A writer in *The Garden* (London), mentions bad effects, such as skin irritation, by handling plants of the fern *Davallia Mooreiana*. His experience was not confined to a single instance. He does not think the spores to be the cause of the affection, as he believes the fronds were not old enough for that, but as to this admits he may be mistaken. Another correspondent confirms this statement by his own experience, and also says, he has had "the same inconveni-

ence when working among specimens of *Alsophila australis*, and thought that it was caused through some of the small scales getting in his eyes." The irritation had been considerably increased by passing the hand over the face.

The same observer says that *Primula obconica* is not the only species of primula which required care in handling. "*P. Sinensis* possesses similar properties, though perhaps not quite so powerful." He thinks it may be useful to know that care is necessary when working among such plants.

He further remarks, as follows: Many of our most beautiful plants are very poisonous. I have heard of ladies who object to poinsettias in a room because they are poisonous, but I do not think there can be any harm in them any more than there is in many other plants to which no objection would be made. I believe there are many things which should be handled carefully, especially when using the knife among them. I was once pruning a *stephanotis*, when a drop of sap fell on my eye; this caused the most intense pain, and the inflammation spread all over the cheek. The poisonous properties of the arum family are well known. I have never experienced the sensation, but I have known others to suffer very much through sniffing the pollen from the inflorescence of *Calla Æthiopica*. If a little of the pollen is drawn into the nostrils the irritation is intense.

SHIRLEY HIBBERD.

English horticulture sustained a severe loss in the death, last November, of this eminent florist and writer on gardening subjects.

Mr. Hibberd was well known as the author of a number of practical works on gardening and for a number of years as the editor of the *Floral World*, and later of the *Gardeners' Magazine*. One of the best known of his books is "Familiar Garden Flowers," one of Cassell's series. The *Garden* mentions him as "a man whose ability as a writer, eloquence as a speaker, untiring energy, and enthusiastic

love for flowers have won him a name that will long live in the memory of horticulturists." As editor of the journals above mentioned he did a vast amount of good work which has been greatly effective in the advancement of horticulture.

SOIL FOR FLOWERING PLANTS.

A series of experiments made last season in England to ascertain comparative values of some different soils for annual flowering plants gave some positive results in accordance with the practices of good gardeners.

Five parallel beds were prepared, each 9 feet by 3 feet. The surface soil consisted of a fairly good sandy loam, the subsoil was red, rather gravelly sand. The first, second, fourth and fifth beds were all completely cleared of soil to a depth of thirty inches. The third bed was cleared of all loam to the depth of eighteen inches, and then filled up with pure sand derived from the lowest parts of the other beds.

The first bed was filled with a slightly earthy peat, and covered with two inches of loam. The second bed, called the "lime bed," had a bottom layer of sod nine inches deep and was then filled up with sandy loam with which two barrow-loads of lime were thoroughly mixed. The fourth, or "leaf-mold bed," had a bottom layer of nine inches of sod, followed by alternate spadefuls of loam and leaf-mold. The fifth, or "manure bed," was the same as the fourth except stable manure was used instead of leaf mold.

Seeds of annual flowers were sown in straight lines, using seeds of the same kind and from the same packet, across all the beds. Eighteen different kinds of flowers were sown, and accurate records kept of the number of days to the appearance of the seed leaves, number of days to the "rough" or foliage leaf, number of days to the first bloom, number of flowers per plant, number of side branches, height of plants, and average length and breadth of the leaves. The results uniformly indicated that the value of the materials in these trials were in the following order: leaf-mold, manure, lime, sand and peat—

the leaf-mold bed producing the finest plants and the greatest amount of bloom. The height, length and spread of roots, length of leaves, number of branches and of flowers per plant, all follow the above order. The breadth of the leaves was slightly more in the case of the plants on the "manure bed."

This result we believe accords strictly with good practice in gardening, and probably another bed in which leaf-mold and old manure should be used in equal parts would give the best results of all. In making up our flower beds we may be satisfied if we can mix in plenty of leaf-mold and well rotted manure.

The experiments noticed were reported by G. F. SCOTT-ELLIOTT, in the *Gardeners' Chronicle* in December.

THE ENGLISH SPARROW.

An English writer on "Ornithology in relation to Agriculture and Horticulture," with some of whose productions have appeared in this MAGAZINE, has lately considered the standing of the common house-sparrow in that country, and with the conclusion, similar to that reached in this country, that fruit-growers and gardeners must make war on the bird for their own protection. Australia and New Zealand, as well as this country and Great Britain, are infested with this pest, and he would everywhere be quickly exterminated if only the means could be found to do it. Poisoned wheat fed to the birds in winter has been recommended in this country, but there has been no concerted effort in its use. An Australian poet thus sings its efficacy:

What means this sadly plaintive wail,

Ye men of spades and harrows?

Why are your faces wan and pale?

It is the everlasting sparrows.

We may demolish other pests

That devastate the farm and garden;

But spoiled by these voracious guests,

Our prospects are not worth a farden.

No more your wasted fruits bewail,

Your crops destroyed by Peas and Marrows;

A cure there is that cannot fail

To rid you of these hateful sparrows.

The remedy is at your feet,

Slay them and wheel them out in barrows;

Poisoned by Faulding's Phoenix Wheat,

The one great antidote to sparrows.



PLEASANT GOSSIP.

FLOWER NOTES.

As spring approaches, we are beginning to plan for the campaign in the flower garden. That is, if we are true flower lovers. We are always in a hurry to get things growing, and then in another hurry to get them to bloom. Now we must possess our souls with patience, if we would grow perennials or biennials from seed; and we know from experience that one trial of growing them, and every year will find us putting in a few seeds of some hardy plant new to us. A bed of campanulas (Canterbury Bells) were my pride the past summer. I had never had more than a clump of them before, and such a show they made with their lovely bells swaying in the wind, all shades of blue, lavender, pure white, and blotched or freckled in darker shades of coloring. There were double and single ones, but I much prefer the latter. Why is it we cannot bear a double of some flowers, while others it is their greatest beauty? These bell flowers are not nearly so light and graceful appearing when double. And now, Mr. Editor, just here I must trouble you with a question. *Are they perennials? When I have had them before, they generally "went up" after the first blooming, so I supposed they were biennials. But somewhere I have seen them catalogued as perennials. My plants looked green and fine when I gave the beds their winter covering, and I hope to see them again in spring, if not, I have another patch of them that will do duty another year.

To keep in stock of biennials one must plant seed every year. Then you are sure to have blooming plants always. What I mean by this is, those plants that bloom the second year, and then give up or die. Perennials, of course, live on from year to year, if given any care at all. But they respond liberally to good treatment. I like to plant seeds of all perennials and biennials in the spring, in May is a good time, when

the ground can be worked well. My experience is that sown then they become good, strong, thrifty plants, able to stand their first winter well. I know they are hardy, but they need some size and strength to stand these Iowa winters. I have tried a score of times, with every care I could, to succeed with them planted in the fall or late summer, but never did, and why not plant in spring, if you order your seeds at the same time you do your annuals or your vegetables. Plants of this class do not keep in bloom so long as many others, and the herbaceous border may be given any out of the way place where the sunshine rests and air freely penetrates. I have a long border one hundred feet in length and four feet wide, running along the side of a low fence. I take more comfort out of that border than out of a half dozen other beds of more costly plants. Everything you can imagine grows herein. and I keep a note book, and have things jotted carefully down for fear I should forget and accidentally root up something new, tucked in the previous year. There are hollyhocks in every color at the back, aquilegias, digitalis, monkshood, delphinium, perennial phlox, sweet williams, rockets and a great variety of iris. I could not well get along without this perennial bed, and do not intend to try, and shall add to it from time to time new things I read of in the MAGAZINE.

M. R. W.

THE BUFFALO BERRY.

A specimen of the fruit of the Buffalo Berry was received in December from L. E. R. LAMBRIGGER, of Big Horn City, Wyoming, and from it has been prepared the engraving here presented, which shows it of natural size.

The plant on which this fruit grows is a thorny shrub, or small tree, sometimes becoming twelve to eighteen feet in height. Its botanical name is *Shepherdia argentea*, the Silvery *Shepherdia*. It is dioecious, that is the staminate and the pistillate flowers are borne on separate

* *Campanula medium*, Canterbury Bell, is a biennial.—Ed.

plants, and it is necessary for the fruit-producing plants to have near them staminate subjects, the same as is the case with many varieties of strawberries. For the reason above mentioned it is doubtful if the cultivation of this tree for fruit purposes can be greatly extended,

freezing, but every frost only serves to increase its flavor; day before yesterday, three of us went out and gathered a ten quart pail full of them, to be made into sauce and served with turkey for a Christmas dinner. It is related to *Eleagnus longipes*, but, unlike that plant, is entirely hardy. *E. longipes* is not hardy north of Washington, and no Japanese fruit tree or shrub will survive Wyoming climate.

A SATISFACTORY PLANT.

I have a very pretty shrub-like plant called *Clerodendron fragrans*, which is one of my particular favorites. I find it of easy cultivation, and when it blooms is certainly worthy of a place in a plant lover's collection. I do not know to what height it might grow, for I do not allow it to go up, up, as it undoubtedly would; I pinch it out relentlessly, and so keep it within bounds. It has bloomed for me both winter and summer. Is budded now, February 14th, for the first time this winter, but blooming late in the fall is probably the cause of its being so late now. The flower cluster consists of a number of small florets, like miniature roses, of a wax-like texture, coming out white, and when fully blown a delicate pink tint; the flowers have an exquisite fragrance, and are very lovely, lasting for many days. Thus far I have found it but little troubled with insects; it requires plenty of moisture at the roots and an occasional washing of the foliage. The foliage, I will admit, is not attractive, but yet I have seen coarser looking plants. The leaves emit a weed-like odor, but the blossoms fully compensate for any lack

in any other part of the plant. The past summer this shrub, in a small tub, occupied a position at the south side of the veranda, and when in bloom the whole yard seemed filled with the delicate perfume. I have seen dainty flowers made in wax by a deft handed girl, and if these delicate, rosette-like flowers had been molded by the same hand, one could scarcely have told any difference, so near alike were they. I have always kept



SHEPHERDIA ARGENTEA.

however desirable it might be. The fruit, when ripe, resembles in appearance the red currant, and is quite like it in taste, being a sharp, agreeable acid. Where it grows in a state of nature, at the west, it affords a welcome supply of healthful fruit at a season when, at the east, we are supplied with the refreshing cranberry. Mr. L., December 15th, says:

The fruit I send you of Buffalo Berry is somewhat shrivelled from the continued

mine growing in winter, because it blooms, but I think it will keep equally well in a light cellar, if desired to be kept in a dormant state. I find it is like some other plants, impatient of being pot-bound; if it should get so when inconvenient to repot, care should be taken to give plenty of water and a good top-dressing of rich soil, digging the top soil away to be filled in with new. Take it altogether, it is a very satisfactory plant to cultivate, fragrant and sweet. How is it we go more into ecstasies over an odorous plant?

M. R. W.

FLOWERS IN THE GRASS.

Some one has said that the appearance of the front yards of a town always give character to the place, as they certainly do to the people who own them. And the dainty grass-plot, be it ever so small, or of the happy proportions so much to be desired, tells its own tale of the thrift, refinement and exquisite taste of its possessor. The old-time flower beds that dotted the front yards of our grandmothers have given way, long ago, by common consent, as it were, to the smoothly shaven lawn of to-day, where the mat of green grass is considered its best ornament. The flowers are none the less precious, however, and they have been made to gladden not only the cook's eyes, but those of our own, as well, when we take our turn in the kitchen or the kitchen garden, where grow and thrive the manifold blossoms that we love.

But who knows the value or happy surprise, each season, when the few tiny crocus bulbs we once planted here and there, in the mat of sod, come up and bloom? Here, first the green little orange ones, with their funny black stripes outside the yellow cup, thrust up timid little spikes of bloom and open out some sunny mid-day to tell us of their well being. Then great yellow ones, like the great aunts and uncles of the smaller tribe, and dainty purple and white. I have grown them successfully thus for years, though, as some others have experienced, I find that they do not increase at the same rate they would in a more mellow soil in the garden beds, where grow their foliage.

The snowdrops, which open a little earlier, do well planted in small clusters

upon the lawn, while I believe that our lovely little blue and white scillas will do equally well, for I tried them successfully last year. I do not mean by this that any bed need be prepared, or even the smallest portion of sod displaced, only make a very small, mellow place under a cake of sod, plant your tiny bulbs singly, or in small clusters, lay the sod back in place again, and next season you will be agreeably surprised at the result. Daffodils do marvelously well planted in this way, both yellow and white of the kind known as the Trumpet Narcissus. I had rather have them than anything else, and their bright, cheery bloom lasts so long and gladdens every one who beholds them. *Narcissus poeticus*, also, is equally as good; but these remarks in regard to narcissus have reference to a rich, deep soil that is abundantly moist in spring. On a dry, gravelly soil the result will not be good, though perhaps the jonquils will succeed better in such position. I do not know if it would injure the foliage to be cut very often with the lawn mower—our own on a lawn of great extent is always cut with a scythe once or twice during the early summer, without injury to the bulbs.

White sweet-scented violets do well for quite a number of years planted where there are apt to be bad places in the sod, and will always thrive if the the grass does not crowd them too closely. Every one will know their value too well not to appreciate this modest little flower, the very sweetest of all spring blossoms. Spending some weeks at one time in an Iowa city and its suburbs, I was much pleased at the beautifully kept yards and lawns of that place. I noted here in a number of the yards, clumps of white, fragrant grass pinks standing out distinctly from the surrounding green of the nicely kept sod. The foliage being of that peculiarly blue-green, and rising up in round, pretty clumps or little mounds, made them especially pretty, and the fact of their being in full bloom at the time added to their pleasing effect.

Blue grape hyacinths flourish best in sod places, and will always furnish bloom, their slender little spikes of blue and white bells appearing as faithfully as spring comes, and the delicate foliage is quite as pretty as the grass around them.

H. KERN.

CARNATION NELLIE LEWIS.

It is a pleasure to issue, as we do this month, a faithful copy of a painting of the beautiful new variety of Carnation Nellie Lewis. This plant has so many good qualities that it cannot fail to come quickly to the front as in every way desirable, both for the amateur and the commercial florist. It is a sport from the variety J. J. Harrison, is a strong grower, blooming freely and producing its flowers on long stems. The flowers are large and full and of a most beautiful shade of brilliant pink—an exquisite shade, is the verdict of all who see it, and one which has long been wanted in this class of plants. It is very fragrant, as any good carnation should be, but is superior in this respect. It is unnecessary to say more, for, like any beauty, its face is its fortune.

LETTUCE MOLD.

One of the annoyances of the gardener who plows for early lettuce, by sowing in hot-beds and cold-frames, before the weather permits of the covering being removed any length of time, is the parasite fungus, *Peronospora gangliiformis*, or leaf mold. It makes its appearance on the upper side of the leaves in the form of frost-like patches or inconspicuous moldy spots. At first they are light colored, and one not used to the disease would not be likely to quickly distinguish it from the healthy leaves. But later the upper surface of the leaf becomes discolored, and finally the whole leaf shrivels up and dies.

These frost-like patches are made up of great numbers of individual plants which draw their sustenance from the juices of the lettuce leaves, within the cells of which it insinuates itself. These are the roots of the plant and the frost-like external portion springs from these and on their branches are produced what is called the "summer spores," small spherical bodies which act as seeds to reproduce the plant.

These spores do not live over winter, but another kind, called "resting spores," or *oospores*, are produced in the cell texture of the leaf, which, it is said, survive the winter, and start new plants in the spring.

This form of mold is said to be found upon a number of other plants besides lettuce. It has been found upon the wild

plants, *Nabulus albus*, wild lettuce, or *Lactucas* and other plants.

As it is known that molds delight in a warm, damp, close atmosphere, a lettuce bed attacked by peronospora should be ventilated as much as possible. Prof. Maynard of the Massachusetts Agricultural Experiment station, who has experimented with a view to finding an antidote for this fungus, gives the following directions:

Grow at a low temperature—31° to 40° at night, 50° to 70° during the day—giving abundance of plant food, and quite copious watering, applying the latter in the morning and on bright days only. One thing to be certainly avoided is extreme changes of temperature.

Ventilation may be effected by keeping the frames open when the weather will permit, thus keeping the air as dry as possible. Gather all the affected leaves and burn them. In constructing new beds discard all material from the vicinity of the old one.

L. F. ABBOTT, *Lewiston, Maine.*

FLOWERS AND FRUIT IN MISSOURI

Our bay window is full of flowering plants, most of which are in bloom, and none of them is more attractive than the Alpine violet and cyclamen, bought of you a year ago. It has now eleven flowers open, of a magenta color, that strikes the eye at a glance. We intend getting others of different colors in the spring.

Did I tell you that my little Perle des Jardins gave me a white flower first, but the latter ones were golden yellow? I mention this so that others may have patience. Here our latest roses in the fall are the brightest colored.

My crocus and hyacinths are peeking their noses out, and I must cover them more or they may be hurt by freezing yet. Ground freezes at night, but bees fly around each day. Drought has prevailed for months, but this evening, January 20th, it commenced raining, and we may get plenty of it now.

I need not tell you that our State showed up well in the apple line, last fall. \$10,000,000 worth of them sold out of the State. This has induced many to plant large orchards, so that in course of time Missouri will be able to supply the great northwest where they cannot grow them.

S. MILLER.

WESTERN NEW YORK HORTICULTURAL SOCIETY.

Thirty-Sixth Annual Meeting.

The horticulturists of Western New York met in convention Wednesday, January 27th, in the Common Council Chamber, Rochester, N. Y. Vice President S. D. Willard, of Geneva, N. Y., presiding. The attendance was large, and, considering the discouragements of the past season, the meeting was very enthusiastic.

After dispatching some routine business, the Vice President stated a plan he had in mind for the encouragement of horticulture in the State, and one which might result in an improvement of the financial condition of the society. He had, upon his own responsibility, had a conference with the Executive Committee of the New York State Agricultural Society, explaining his plan, which was that the State Society should offer better premiums for horticultural exhibits, and that the members of the Western New York Horticultural Society should make exhibits at the State Fair as a society, and the premiums secured for such exhibits should go into the funds of this Society.

Messrs. W. P. Rupert, of Seneca, S. J. Wells, Fayetteville, James A. Root, Skaneateles, G. B. Arnold, Barre Centre, and W. H. Pillow, Canandaigua, all spoke in favor of the plan.

Mr. W. C. Barry regarded the question as one of the greatest importance, and urged a combination of the members of the Society. The residents of Western New York hardly know what magnificent fruit is raised in this section, and a very little effort would collect such an exhibit of fruit as could not be excelled in the United States or even in Europe.

Professor L. H. Bailey, of Cornell University, thought the plan, as stated by Mr. Willard, solved the problem for creating a greater interest in horticulture and improving the financial condition of the Western New York Horticultural Society. He referred to the fine fruit exhibits made at the Michigan Agricultural Society's annual fair by the State Horticultural Society, and the benefits of the plan as an educational feature for the whole State.

The discussion resulted in the appointment of the following committee to formulate and present to this meeting a plan for carrying out Mr. Willard's idea :

Messrs. L. H. Bailey, W. H. Pillow, T. S. Hubbard, S. D. Willard and W. C. Barry.

AFTERNOON SESSION.

Mr. S. D. Willard, Vice President, presented the annual address, which, after a brief review of the unfavorable weather of last year, so destructive to the fruit crops, consisted almost entirely of appropriate and feeling tributes to the memory of those of the members who had died the past year, and especially in reference to Patrick Barry, who had for about thirty years been the President and leader of the Western New York Horticultural Society.

In the absence of any report from the committee on native fruits, Mr. W. C. Barry read a paper on grapes, emphasizing the fact that his report was concerning fruit tested only in the neighborhood of Rochester.

GRAPES—OLD AND NEW.

During the past ten or fifteen years many new varieties of grapes have been introduced, and are now on trial in various sections of the country, and reports as to their merits and demerits are beginning to be published. Planters will examine these statements with considerable interest, in order to see how the experience of others compares with their own. There are many, too, who were unwilling to assume any risk themselves, and have permitted others to do the experimenting, and these are now prepared to profit by the results.

It will be rather discouraging to planters to hear such an adverse report as experimenters are forced to make concerning many of the varieties introduced—the disappointment is the keener for the reason that expectations were raised so high. That considerable progress has been made it is a pleasure to admit, but, on the other hand, it must be acknowledged that serious mistakes have been committed in placing upon the market so many kinds which are ill adapted to satisfy the general want.

This country is so large and climate so diversified that it is next to an impossibility to obtain varieties which will succeed generally. There is, perhaps, not another region in the United States where so large a number of kinds succeed so admirably as in the grape region of Western New York, and yet of the recently introduced kinds how few there are that are likely to be retained for cultivation. Notwithstanding the recent additions, the old and popular Concord, which originated with Mr. Bull, of Massachusetts, in 1853, still heads the list, and is unequalled for general purposes. The Hartford Prolific, too, has not been displaced by any of the new claimants for popular favor.

Among recent acquisitions, the Worden is one of the most important; it is the nearest approach to the Concord, and is, doubtless, destined in some localities to supersede that famous variety. It ripens a week earlier, is of better quality, as vigorous a grower and as good a bearer, and takes well upon the market. Although it has, like the Concord, a thin skin, which necessitates extra care in handling and packing, especially for distant transportation, it is in reality an important gain for the grape grower.

Barry is one of the Rogers' Hybrids, which is especially valuable as a market grape, on account of its remarkable size and handsome appearance combined with good quality. In it we have a native grape, which in size of cluster and in general appearance resembles and equals a foreign or hot-house grape; the clusters on a well grown vine are immense, uniform in size and equally distributed over the plant. In fact, the vine is inclined to overbear, and frequently does so, to its great detriment, thus causing disappointment to the grower. However, if care be taken not to allow the plants to yield too heavily, a remarkable and profitable crop can be secured every year. We prefer it to Wilder, and think that it has merits which are not fully appreciated by the grape grower.

Herbert is of better quality, but not so large or so uniform. Early Victor, which originated with John Burr, of Leavenworth, Kansas, in 1871, and was expected to supply a long felt want among very early market grapes, on account of its earliness and good qualities, but it is not large enough, and it ripens little if any earlier than the Hartford. Moore's Early is a large and showy grape, and would, if it were a little more productive, be grown instead of the Hartford; it will be popular, however, over a wide area as a large, handsome, early grape. The Jessica, introduced by D. W. Beadle, of St. Catharines, Ontario, is an early white grape, ripening with Delaware and Lady, of good quality, but too small.

Among new early grapes the most promising that we know of is the Winchell. It originated in Massachusetts, and is the earliest white grape in our collection; the bunch and berry are of medium size, quality excellent, and the vine is vigorous, healthy and productive. Green Mountain seems to be identical with it.

Ulster Prolific is a handsome red grape, introduced by A. J. Caywood & Son, and is said to be a seedling of Catawba crossed with a wild grape. The bunch and berry are of medium size, but the color is bright and attractive, and the plant vigorous, healthy and productive, hence it will undoubtedly be esteemed in some localities.

The Vergennes, which originated in Vermont, is another of the newer grapes which growers will be inclined to keep and cultivate; it is large and of good quality, and the skin so firm that it keeps well and is an excellent shipper. If its color were brighter it would be more popular.

The fact is, that a good red market grape, which will succeed generally, is something that we have still to look forward to. We have the Concord, Barry and Wilder for black grapes; Niagara for white; Brighton, Lindley, Salem, Catawba and Delaware for red; but among these red varieties there is not one which has the qualities which render it universally popular and useful in the sense that the Concord is. What we need is a red Concord, and whoever is fortunate enough to originate such a variety will certainly have a prize. Woodruff Red has size, good color, vigor and productiveness to commend it, but its quality is so poor that it will not become a general favorite. Although quality is not essential in all markets, consumers are becoming more and more particular, and require, in addition to size and appearance, good flavor.

Wyoming Red would be valuable if it were of better quality; the berry and bunch are large, color a bright, clear shade of red, vine vigorous, healthy and a great yielder, but the flesh is pulpy and the flavor poor. In view of its vigor, hardiness and productiveness, handsome appearance and the time

of ripening, with the Concord, it may have value in some localities as a market grape.

The Brighton, which was originated by Mr. Moore, of this city, and which, on account of its superior quality, entitles the originator to be considered a public benefactor, fails in some localities.

The Catawba is another superb grape, but it will not ripen everywhere. Iona, a delicious grape, fails often for the same reason. Delaware, so well known and highly appreciated by the amateur, seems to possess every requisite except size. Jefferson, one of the best of the celebrated Ricketts hybrid grapes, is handsome, and possesses in high degree what has long been sought after in native grapes, refined flavor, but unfortunately it is too late for this locality. And what a misfortune it is that Lady Washington will not mature here. It will be interesting to learn what value is placed upon it further south.

Eldorado, a full sister of that variety, with fine flavor to recommend it, has a serious fault of not setting its fruit, and hence must be included among the valueless sorts.

Empire State, one of the most promising of the many kinds introduced by Mr. Ricketts, the vine is healthy and vigorous and yields well, and the bunch is large, long and showy, and the fruit of good quality, but the Niagara seems to occupy the place it was destined to fill.

Highland, one of the largest and handsomest of Ricketts seedlings, is too late for this latitude. It will undoubtedly succeed farther south where Lady Washington does, as it ripens at the same time.

Moore's Diamond, originated by Mr. Moore, the raiser of the Brighton, gives promise of taking a prominent place among white grapes, but it has not been tested sufficiently yet to warrant us in giving a decided opinion. Those who have grown it consider it an important addition.

Dutchess is a white grape of fine quality, and the vine is healthy, vigorous and productive if planted in a favored spot, but it can hardly be recommended for market. The amateur who possesses a favored location and is willing to bestow extra care upon it, will feel abundantly repaid for his trouble.

The Gaertner is another of the Rogers', which gains in our estimation as a market grape the longer we are acquainted with it. Large, handsome and showy, it attracts attention wherever shown and commands the highest price in the market. The plant is vigorous and productive. For some reason it has failed to receive the attention it justly deserves.

The Niagara is a very popular white grape, and justly so, for up to the time of its introduction, growers were without a really good white market grape. We had, it is true, several white grapes, some of them of very fine quality, but they lacked vigor, health and hardiness, while the rest, though they possessed these essentials, were not good enough in quality to meet the requirements of a market grape. The Niagara has disappointed growers in some places, especially where the vineyardist has grown that variety only and depended upon it solely for profit. It seems to us that with grapes, as with other fruits, there should be several varieties grown, so that if, from some unforeseen cause, one variety fails, we shall have others to fall back upon.

The Pocklington is growing in popularity from year to year, and where it ripens is much esteemed.

Moyer, also known as Jordan, is a red grape of recent introduction, and is said to possess two essential qualities, earliness and excellent flavor. We have not grown it long enough to venture an opinion as to its value. Its clusters are small.

The Eaton, sent out in 1886, by Moore & Son, and afterwards purchased by the T. S. Hubbard Co., is one of a large number of seedlings grown by Calvin Eaton, of Concord, N. H. The bunch is very large-shouldered and compact, berry very large, round, black, covered with a thick blue bloom—in general appearance resembling Moore's Early; in quality it hardly equals the Concord, but its size and attractiveness will make it undoubtedly a valuable market variety, if its growth, hardness and productiveness are satisfactory. We hope that experience will confirm the expectations raised for it.

Esther, white, and Rockwood, black are two new grapes, originated by Mr. Bull, of Concord fame, both are described as being pure natives of large size, handsome and of good quality.

The Colerain is a new white grape, originated by D. Bundy, of Colerain, Ohio, and is said to ripen with Moore's Early. It is now being tested in different parts of the country, and in a year or so we shall be able to fix its value.

Mimnehaha, originated by the late Marshall P. Wilder, is a white grape of fine quality, ripening with Concord, but the foliage mildews badly, hence it has no value.

Victoria, a white grape, the only one of the T. B. Miner seedlings the merits of which had any recognition in this section, has several good qualities, and would have found a place on the list of valuable grapes had the Niagara not been introduced, but that variety supersedes it.

Dingwalls, white, almost for the same reason, is displaced by the Niagara; it ripens just after the Hartford.

Yunker's Honey Dew is a pure native, ripening early, to the Hartford, and in some respects superior to that variety; berry large, round, black with blue bloom, bunch large, long, compact; skin thick, flesh pulpy but sweet; vine vigorous and productive, and foliage healthy.

The Hayes, a white grape, raised by John B. Moore, of Concord, Mass., and offered for sale for the first time in 1885, is not large enough to be in favor with many cultivators; the bunch is short and small and the quality of the fruit medium, and the vine is not productive enough.

A most delicious white grape of medium size is the Golden Drop, introduced by Pringle, of Vermont, in 1869. It will delight the amateur who seeks the choicest, and is willing to give it extra care.

Among high flavored grapes the Eumelan occupies a foremost place. It is not suitable for market, but the amateur can hardly be without it. The bunch is of good size and compact, and berry round and of a blue-black color. It is sweet, sprightly and deliciously vinous, a flavor distinct in every way, and most pleasing to tastes that appreciate vinous character. I speak of this grape because it is gradually being neglected and soon will be forgotten. In my estimation it is too good a grape to be ignored by the amateur. The fact that it is propagated with difficulty and therefore demands a higher price is, perhaps, the reason why cultivators do not give it more attention.

The Telegraph, or Christine, is a market variety which, though rarely referred to by growers, deserves to be mentioned. It is not generally grown at present, but may be regarded as a valuable grape in consequence of its compact, shouldered clusters; it can be handled and shipped successfully and always looks well, so that it invariably commands fair prices.

It is rather remarkable, and at the same time par-

ticularly unfortunate, that the large, showy, fine-flavored varieties of hybrid grapes originated by Mr. Ricketts, should prove to be so ill adapted to general cultivation. For nearly twenty years Mr. Ricketts gave great attention to the raising of new seedling varieties, and by crossing he produced a wonderful collection, embracing many hundred different kinds. Time has demonstrated that the foreign element has rendered most of the seedlings too delicate in habit of growth and foliage to resist successfully the severity and extremes of our northern climate, but it is to be hoped that there will be found some among them which will survive the test and prove desirable. Further south, where the climate is less rigorous, some will thrive, and we believe that the seedlings are of such merit that they deserve to be fully tested in all regions which are likely to be favorable for their growth and culture.

There was every reason to expect most important results from the long, patient and intelligent labors of Mr. Ricketts, and his inability to produce by hybridization varieties better calculated to supply a general need is rather discouraging to experimenters in that line of work. Still his success in producing crosses between purely native varieties, as in the case of Empire State and Jefferson, has been great. I believe that every year's experience enables us to work with greater intelligence and precision, and the field is so broad and the possibilities so great that we should not be discouraged, but rather encouraged to prosecute with even greater zeal and interest the work of producing new kinds by crossing purely native varieties. We should not forget the success of Rogers and Moore in the production of such varieties as the Brighton, the Wilder, Barry, Salem, etc.,

*I have annexed a table containing a few other varieties which we have carefully tested in our vineyard, and which we shall be obliged to reject as unprofitable for cultivation in this locality. They may have value in other places. It will be seen that many varieties which are highly prized in the southwest are valueless here. We hoped to discover some merit in them for this locality, but have been unsuccessful. Elvira is the most promising, but having a thin skin bursts easily.

In closing, I will name the six grapes which have given the best results in the vineyard for market: Lady, Niagara, Barry, Concord, Worden Gaertner.

Mr. T. S. Hubbard, Fredonia, as a critic, desired to say that his experience agreed with that of Mr. Barry, except he would not put Lady first in the half dozen varieties he would select for his own garden.

Mr. C. A. Green said the Delaware did better with him, and was a noble variety where it did well.

Mr. Hoag said that the Concord was not as good in Niagara County.

Mr. Hubbard reminded members that a grape must not be condemned because it does not succeed in every section.

Mr. C. W. Seelye considered Telegraph a difficult variety to manage, the fruit rattling off before it can be got into market. If marketed in good shape it must be packed before quite ripe, and in that condition it is not good, if at any time.

Mr. G. Z. Snow would not place Hartford before Moore's Early, and condemned it as a market grape.

Mr. Green asked if the thinning out of Worden as much as the Moore's Early would not have the effect to make it ripen as early.

Mr. Snow hardly thought so. The longer the fruit

* This table is omitted here.—ED.

of Moore's Early remained on the vine the better it was; but before Moore's Early was gone the Worden is in good condition.

Mr. Hubbard said Moore's Early ripened about six days before Worden.

Mr. Barry asked what experience members had with the Barry and Wilder?

Mr. Hoag had heard that Barry mildewed; but Mr. J. Gardner thought the speaker could not have the Barry, as it did not mildew.

Mr. B. W. Clark said Barry did mildew at Lockport, but not more than any of the Rogers varieties, while it was a better keeper.

Mr. Snow reported Wilder as not a success, because it cannot be worked hard enough; too shy a bearer.

Mr. Hubbard thought the reason why Barry was not better known is because it is not grown more. It was a good grower, and will not overbear as will Wilder.

Mr. Clark never had any trouble with Worden. It would overbear if allowed to. Perhaps the Barry mildewed because he allowed it to overbear.

Mr. Hubbard asked if it was settled that Winchell and Green Mountain are identical, to which Mr. Barry answered "Yes."

Mr. Snow said Brighton was not a success in his section of Yates County. It was a good grape when fruit was obtained, but it did not fertilize.

Mr. Hoag had a few rows of Brighton with Niagara, Delaware and Rogers No. 15 (Agawam), and they always bear well.

NOMENCLATURE.

When the report of Committee on Nomenclature was called for, Mr. Barry referred to the suggestion of the American Pomological Society in regard to giving short, simple names to fruit, etc. In the next ten years seedling fruits would be raised, and it was important that this society should lead in this reform.

Mr. Hubbard seconded the suggestion, quoting as cases requiring such simplification, Woodruff Red, White Diamond, Ulster Prolific, all of which might be shortened.

ORNAMENTAL TREES AND SHRUBS.

Mr. Atwood, Geneva, read a report from this committee. In reference to the same subject Mr. W. C. Barry read the following paper written by Mr. J. J. Thomas, of Union Springs.

ORNAMENTAL PLANTING.

Being unable to enjoy the privilege of attending the meeting of the Western New York Horticultural Society, and being earnestly requested by Mr. Barry to prepare something on ornamental planting, I offer a few remarks on the subject, at the same time taking the liberty of expressing the great interest I feel in the success and usefulness of the society, in my connection with it for the thirty-six years since its origin.

The society, and the community at large through its influence, have made great progress in ornamental planting, at the same time a boundless field for improvement lies open before us. The refining influence of ornamental planting cannot be overestimated, and the attractions it offers to country life, to young people growing up towards maturity, are of a greater value than can be counted by dollars and cents. Nearly every one appreciates more or less the beau-

tiful appearance of a fine landscape garden, but there are few of this great class who can spare the means to go into costly planting. We do not expect anyone to undertake so magnificent a garden as Mr. Hunnewell's near Boston, who applies his expenditures so skillfully and economically that his grounds require an outlay of only fifty thousand dollars a year; but if the spirit of landscape gardening is infused into every one who owns but half an acre of ground, constant opportunities will occur for presenting beautiful shrubs and brilliant flowers even in this circumscribed space; while the owner of the large farm may enjoy the shade of finely developed trees and a handsome green lawn immediately about his residence, and lines of timber screens more at a distance.

A great improvement has been made within a comparatively brief period, in the appearance of village residences by the use of the hand lawn mower, by which a more perfectly shaven green carpet is secured at less than one quarter the labor formerly required in the use of the lawn scythe; and this improvement is mentioned as an instance in which a great deal may be accomplished with little expense. We shall confer a great benefit on the community if we can point out to our neighbors other modes of making these desirable improvements at small expense. For example,—show how grounds may be cheaply ornamented by selecting hardy and free growing plants and trees which will require but little care and labor to keep them in the finest condition, leaving those who have large funds with exalted taste, to indulge in such luxuries as orchids which sell for a hundred dollars a plant.

It may be well to enumerate a few of the ornaments which are easily and cheaply obtained and kept with little trouble year after year. First of all, and peeping out from under the receding snow drifts in spring, is the well known snowdrop, which for long years will hold its place and bloom annually, closely followed by the white, yellow, pink and purple crocus, and by the brilliant blue Siberian squill, and later by the hyacinth and the early tulips. In addition to these, and costing nothing but the labor for collecting, are the wild hepatica in the borders of woods, the white blooming sanguinaria and the yellow blooming erythronium, and the wild trilliums, phloxes, the blue pulmonaria, and many other wild bloomers. The herbaceous perennials, if properly selected, will hold their places where planted for many years, including such plants as the pæonia, panicle phlox, dictamnus, dicentra, the many species of iris, and a long list, of which these are only a specimen. When once established these will hold their places for years. There are some small shrubs of equal persistence, among which the *deutzia gracilis* is a beautiful and graceful specimen, one mass of which I have seen bearing thirty thousand snow-white, bell-shaped flowers.

These small shrubs, with a number of the herbaceous perennials, although growing without care, will do better and bloom more abundantly in a cultivated bed, which may be either circular or elliptical, and which would be good treatment for all shrubs while they are small, for a few years after planting. Arabesque beds, with fanciful outlines, are best adapted to low bloomers which exhibit the outline, such as verbenas, pansies, snowdrops and squills.

Those who indulge in window gardening, may easily set out beds of pelargoniums and other bedding plants in addition to the ornamentals already named, but there are enough of the hardy plants to give abundant employment and to make a fine display, costing almost nothing but personal labor.

It is not necessary that an ornamental garden or grounds should be laid out in an elaborate manner, or with costly mathematical precision. If the lawn was made even, when first laid out, it is easily kept in the shape of green velvet; and with this as the foundation, occasional elliptical and circular beds will receive all the ornamental plants. Three-fourths or nine-tenths of the surface will be the smoothly shaven lawn, treated with the lawn mower once a week, while the flower beds and the single walk will be easily kept in perfect order. I have seen an admirable piece of ornamental ground surrounding a residence, and about an acre in extent, with a few beautiful flower beds cut in the green turf, which required less than half the time of the gardener who had it in charge. Other grounds badly laid out in lines, squares and dug beds, have cost triple the labor and care, and even then were not in good order.

Among the larger shrubs which will grow freely and with little care except in preserving in them a graceful and symmetrical form, are the Tartarian honeysuckle, the scarlet Japan quince, the three species of philadelphus, the plum-leaved spiræa, deutzia crenata, and two shrubs of rather recent introduction, the weigela of early blooming, and the plumed hydrangea in early autumn and of magnificent growth; while a few climbers and trailers will be quite in place in the rougher and more secluded portion of the larger grounds. A select few are some of the hardiest species of clematis, the delicate akebia, the hardy periploca, the native celastrus, the rank bignonia, and the free-growing ampelopsis.

These scattered suggestions are intended as a few brief hints on a subject which may well occupy whole columns, but it may be well to add a few rules which were prepared some years ago for another article on increasing the attractions of home:

1. Remember that buildings cost much, while neatness and planting cost but little and should not be omitted.
2. Surround the dwelling with a smooth lawn, graceful shrubbery and blooming flowers.
3. Give beauty and finish, instead of disorder and waste.
4. Secure pure air, with nothing to impart impure odors.
5. Have dry walks about the dwelling and farm buildings—do not tread in mud.
6. Provide a home museum for the young people.
7. Assist the young members of the family in the study of the natural sciences in collecting objects, and in sketching and drawing.
8. And, as throwing a pleasing and beautiful charm over all the natural objects, cultivate those benign virtues which always present kind and pleasant faces to the occupants of the home.

Mr. Barry supplemented this paper by expressing his surprise at the neglect of wild flowers, which could be so easily and successfully transplanted from the woods. The liver leaf and other anemones would pay anyone for their trouble. Some people object to ornamental gardens because of the expense, but this need not be, as the woods are so easy of access and afford many of the articles needed. Mr. Thomas' idea is to make the surroundings of home more beautiful.

Prof. Saunders agreed with the remarks of the last speaker in reference to wild flowers, and mentioned several additional varieties, viz.: blood root, the Jeffersonia diphylla, or twin-leaf; the wild columbine, with its graceful plumes, which adds such a charm to every garden. There were also two or three cultivated evergreens that might be mentioned. The

Colorado Blue Spruce, one of the most beautiful evergreens in the world. It grows well in all parts of Western Ontario, as far north as Ottawa. There was also the Picea concolor, which, if grown from seed collected from the mountains of Colorado, makes beautiful objects on the lawn. A third species of evergreen is Pinus ponderosa, which succeeds in very arid districts, and will adopt itself to unfavorable conditions. Douglas Fir, seed obtained from the mountains, also does well at Ottawa. The speaker also named one or two deciduous trees that are red-leaved in the autumn. A Japanese Maple (*Acer Ginnala*) is a small, shrubby maple, which he found hardy in the Northwest Territory. *Berberis Thunbergii*, leaves scarlet-red color in the autumn, is a brilliant-colored species and especially desirable in small grounds, attracting general attention and affording much pleasure. He would also mention an *Aquilegia Burgeriana*, seed obtained from the Botanical Gardens at St. Petersburg, Russia, large blue flowers, very brilliant, and flowering before any other varieties are open. It is one of the most valuable of the aquilegias under cultivation. *Aquilegia chrysantha* is similarly useful for the reason that it blooms after the other species and remains unmixed.

REPORT OF COMMITTEE ON ORNAMENTALS, BY
GEORGE G. ATWOOD.

MR. PRESIDENT AND GENTLEMEN:—

After the orchards and vineyards are planted in the country place, after the village or city house is built—the question of what ornamentals to use in the decoration of the surroundings forces itself forward for attention. As no two places are alike in location, color or perspective, so there can be no absolute rule as to what shall be planted for ornamentation. This condition of facts gives opportunity for the greatest skill of the landscape architect, and his efforts attain the highest results only when good taste is combined with a knowledge of ornamental trees and shrubs and of their future care and growth.

No place is too large, too rugged, too hot, too cold, too wet or too dry—and no place is too small—to develop love and genius in the care of some of the hundreds of thousands of flora of this and other countries. There are many instances where immense tracts of land are occupied, and their natural beauties brought out, by a judicious care of what nature has supplied in profusion; and others where barren effects are overcome by transplanting from other soils the species for desired results.

The ends of the earth are searched to supply the conservatories of wealthy people with rare plants, though the chief merit of some may be the dollars paid for them. Contrast with this the devotion shown in the care of a single plant, the ecstasy over a simple blossom in the one-room home of the tenement!

It was a move in the right direction when the study of botany was introduced into the schools, and the "higher education" of the people can only be attained when botany is used in a practical way and when the arboretum, however small, shall lend its assistance, and go hand in hand with the studies that elevate the students to a greater love of nature, and, by a greater knowledge, develops the genius which can picture to us, in colors or in words, the ennobling influences of our flora and incite to a care of its choicest selections.

Your committee would call your attention to an unceasing popular demand for choice ornamentals, and their general planting will grow as our region increases in population, wealth and refinement. We are supposed to be centuries behind the older countries in landscape gardening; but let us hope the

rigid and exact methods of the East may be left to themselves, while we, in a free country, may be as free to adopt designs as broad as our territory.

We have five times as many species of native trees, that grow over twenty feet, as the whole of Europe, so we are not dependent on foreign lands for material to work with, though we can and do use their best specimens.

A list of what there is to plant would be a condensation of the catalogues of our largest growers and the columns of our horticultural journals, all of which are improving in descriptions and illustrations from year to year.

While the world at large is looking for a blue rose, the rest of us are finding things fully as remarkable; and it seems to be only necessary for a new thing to be needed for it to be found.

The following are worthy of attention and, while all are not new, all are proving valuable as they are further tested.

Ptelea trifoliata aurea, brought out three years since; has solid richest yellow foliage, keeping same color till Nov. 1st or later. It has a gloss on its foliage which brings out the color very beautifully. It makes a big shrub or small bushy tree, of 8 to 15 feet in height, is very easy to transplant and exceedingly desirable and useful to landscape gardeners and all who have lawns. This is of a richer color, and keeps its full color later than any other golden shrub yet introduced. It is the best of all the golden shrubs.

Ulmus sinensis, is a rare but not new tree with leaves about 2½ inches long by ½ inch wide, wedge shaped, with sharp teeth, a hard glossy surface to the very distinct foliage, and the curious and beautiful habit of all the leaves standing in one plane on the growing shoots. This pretty fashion of the foliage has much to do with the great attractiveness of this fine elm. There is a fine large tree of this sort in Central Park, New York, which has been greatly admired by expert judges of fine trees for years. It makes an exceedingly twiggy, thick topped tree and grows with vigor. It succeeds very well grafted high on English elm, for standards, or budded low on that stock for pyramids.

Ulmus Dampieri aurea.—A fine tree with brilliant golden foliage, especially beautiful in early summer and keeps its color till fall.

Ulmus alba pendula Morgani.—A seedling found in the woods of Cayuga County, N. Y., and transplanted by Henry A. Morgan, Esq. Has grown several years, forming an upright center and very pendulous side branches, of free, straight and vigorous growth. The tough character of the long drooping branches adds to the beautiful grace of the trees and commends it to shippers who rarely handle Camperdown Elm without breaking the tops. Foliage abundant, color good, very promising.

Robinia Pseudacacia var. mimosæfolia, is the most beautiful of the large number of varieties of this native American species, which have been originated in European nurseries. As the name suggests, its foliage is made up of a great number of very small leaflets, much resembling the foliage of the mimosa. It is well worth growing for a choice lawn tree, and is now grown largely in the European nurseries.

Forsythia intermedia, is, apparently, a cross between *F. susp.* and *F. viridis*, and is very rich in foliage, with much of the trailing habit of *F. susp.* It ought to be very satisfactory.

Syringa Japonica (Giant tree lilac).—A new species of lilac. The oldest specimens in this country are in Boston, and are now twelve years old and over twenty feet high. Foliage is distinct and durable. Blooms

white, on the erect growth and of immense size.

Syringa Japonica argentea.—Is a form of the above well known "Tree Lilac," with foliage broadly marked with clear white, and will be interesting to many as the first "sport" yet obtained of this superb new species of the lilac family. It originated from seed in Shady Hill Nurseries, Cambridge.

Acer platanoides purpurea (Purple Norway maple).—Originated in Geneva. Color distinct and permanent. Habit of growth like Norway maple, the foliage, however, and leaf stalks are a distinct reddish purple color, holding permanent in midsummer and especially distinct in spring and autumn.

Xanthocera sorbifolia, is a newly introduced flowering shrub growing to a height of 6 to 9 feet. It produces a long raceme of white flowers with a crimson center; flower an inch and a half in diameter. One of the most remarkable shrubs of recent introduction.

Rhodotypos kerrioides, is a shrub of compact growth, with lively bright plicated foliage, produces clusters of white flowers, which is followed by black, shining seed remaining on plant till new foliage appears.

Calypstistigma Middendorffia, has yellow flowers, and is called the yellow weigela.

Fagus purpurea tricolor, is a charming acquisition having foliage brightly marked with crimson and white spots. A remarkable variety of Beech.

Syringa villosum, is the strongest grower among lilacs, producing leaves 8 inches in length, flowers pink changing to pure white.

Abies Nordmaniana aurea, is the only well marked sport of this noble fir, and promises to be quite effective, with its deep yellow shadings on the very dark green of this species.

Esculus rubicunda pendula.—A seedling from the red horse chestnut, with a fine pendulous habit and good red color. This should make a very effective tree for the lawn.

Fagus purpurea pendula.—This new beech is now well proven to be a great acquisition to our finest trees. Its habit of growth is to make a straight leader and to droop in all the lateral branches decidedly. Its color is equal to that of the best purple beech of upright habit.

Hydrangea Hortensia ramulus coccinea. This variety, like *H. Otaksa*, belongs to the *Hortensia* class but blooms more freely and flowers are brighter and with larger trusses of flowers. The name—red-branched—is given from the fact that its foliage stems are a dark purplish color while the flowering branches are dark crimson, shading toward the heads to a transparent red. The best variety for culture in pots or tubs and for forcing, retaining, as it does, its clear bright rose-color much better than *Otaksa* or *Hortensia*. The most reliable of all the hydrangeas of the *Hortensia* class and claimed by good authority to be the most valuable of all the hydrangeas thus far introduced.

CURRENT PEST.

The report of Erie County was furnished by Mr. Varney, of North Collins, and contained a reference to the ravages of the currant borer.

Mr. E. H. Burson, Clifton, asked what was the best method for the extermination of the pest which destroys the foliage of the currant? Could it not be destroyed in the winter by digging at the roots? Spraying was not always a success.

Prof. Saunders said there were three insects embraced in this problem. The borer is the larva of a small moth. Mr. Berson's remarks appeared to cover

two distinct species. One is the larva of a moth and the other of a fly—the latter the caterpillar of a saw fly. They pass the winter in a chrysalis state in the ground, very often under the bushes, and may, to a limited extent, be destroyed by stirring the soil and exposing to the air, and by the application of lime; but he did not think it would be wise to depend on this method, for the reason that the chrysalis is so encased as to be almost impervious to the weather, or to the action of any substance applied to the soil. Very early in the spring the chrysalis gives birth to a fly, which lays eggs on the ribs in rows, under the leaves. These hatch in a few days, and the young larvæ soon destroys the foliage. A little spraying with Paris green and water, or hellebore and water, will kill them. In half an hour the bushes may be entirely clean, and very little exertion is required. These flies do not all appear at once. Two weeks later other specimens may come from the ground, and another brood be hatched. Watchfulness is needed to overtake these successive broods. If allowed to mature, the caterpillars will drop on the ground under the bushes, construct their cocoons there and show themselves later in the season.

The second insect is called the gooseberry or currant span worm, for the reason that in crawling it loops its body as if measuring the ground. It is spotted with black, and is about an inch long. It is not killed so easily with hellebore as with Paris green. There is only one brood of this insect in the year. The eggs are laid by the parent moth and remain all the winter attached to the twigs of the bushes, hatching in the spring. They are very small and difficult to determine. One dose of Paris green is generally sufficient.

The third insect, the one mentioned by Mr. Varney in his report, is known as the currant borer. The moth is a very beautiful little thing. It deposits its eggs on the surface of the twigs; when hatched, the young larva eats its way to the center of the stem, and burrows up and down. There is no better plan than the one suggested by Mr. Varney,—to cut off the affected twigs, which is best done in the winter, when there is always a good deal of pruning done. Where the bush is badly affected hollow twigs will be sure to be found. When a hollow twig is once found, further search for the insect should be made throughout the bushes. Where the Paris green mixture is used, as previously referred to, it may be in the proportion of about half an ordinary teaspoonful to a patent pail full of water.

MONROE COUNTY REPORT.

Mr. C. M. Hooker read this report, which opened with the following remarks:

We are sorry to report another unfortunate year for fruit, in the year 1890. Frequent rains at the time of flowering prevented the fertilizing of a large proportion of the apple, pear, plum and cherry blossoms. The two last named were a light crop from that cause, quinces a moderate crop; blackberry crop remarkably large, and other small fruits produced fairly well. Grapes an unusually large crop. Many varieties of apples and pears set a good crop of fruit, but immediately after the falling of the blossoms, the scab fungus developed in remarkable abundance on the leaves and young fruit, causing the fruit to drop, or rendering it worthless, and in many cases nearly denuding the trees of foliage, and thus seriously checking the growth and affecting the health of the trees. An examination at the present time shows only a moderate number of fruit buds formed and probably there will not be a heavy crop the coming season, unless the season proves unusually favorable. It was

observed during the past year, as in previous years, that the pollen from the flowers settling upon the leaves and fruit provided just the nourishment suited to the scab fungus. This was proven to be the case from the fact that when only part of a tree blossomed, upon that part the fungus developing from the pollen resting upon the leaves and fruit could be readily seen, while the rest of the tree was yet in a healthy condition. The apple orchards of Monroe County have produced but four good crops of fruit in the last ten years; and as a result, orchardists were becoming discouraged, and the planting of apple trees has nearly ceased. Such fruit as was grown in the county last year all brought high figures, and good crops next season may yield profitable returns, as the markets are bare of dried and canned fruits to a remarkable degree. Good crops and prices this year will go far to make up past losses.

Mr. Barry asked Mr. Hooker to make further explanation in reference to the scab fungus.

Mr. Hooker said he had had some disastrous experience with it. Persons were apt to think the destruction of the apple crop was owing to the heavy rains of last spring. It was a fact that rains destroyed the blossoms before they were set, but the later plums set and produced a fair crop of germs. At that critical time the fungus appeared. There was a fair setting of apples of some varieties, but later observation revealed the fact that the foliage showed a mould, and dark spots were forming on the apples—the scab fungus. Experiments have been made at the stations at Ithaca and in Wisconsin, to prevent or destroy this fungus. Year before last Prof. Goff's experiments tended to show that the use of carbonate of copper in connection with ammonia solutions, was a good specific, the fruit benefiting after seven applications. It was a poisonous article and must be used with care. In a recent letter, Prof. Goff stated that his experiments have since been more extended, but said that carbonate of copper used in double strength (8 ounces to 100 gallons water) was found to be pretty successful, although the season was very wet. The apples affected by the fungus shriveled up and fell, and the leaves turned yellow. The leaves in many cases were nearly all destroyed, some turning black and falling off.

Professor Bailey gave a statement of the appearance of the scab fungus and of its effects on fruit. He thought that the failure of the apple crop was almost entirely due to the fungus. While it is not known where the fungus lives in winter the speaker believed that it existed on the twigs and dead leaves, and he thought it likely that the damage might be to some extent averted by spraying the trees in the winter season. The fungus might not appear to any extent next season; but it will always be present. The speaker was prepared to combat the idea that arsenites would destroy foliage. The experiments at the station last year proved this, but that they were scorched by the fungus. They must distinguish between the action of arsenites on leaves and that of the insects which attack them. Arsenites must be weighed out, and when mixed must be kept in a state of constant agitation while using. Coarse spraying produced more injury than the finer. The same amount of poison applied through a coarse spray did more damage than if applied through a fine one. The best plan to combat the plum curculio was to spray, and at the station they expected the same results from spraying for curculio as for codling moth. He thought the advent of the arsenical sprays for almost all kinds of leaf-eating and fruit-eating insects, had worked a new era in horticulture.

In reply to the question, "What about the apple crop this year?" Prof. Bailey thought they would have a good crop.

Mr. Hooker explained that he was not opposed to spraying, but simply desired to go on record as calling attention to the danger of spraying. Properly done, spraying could be used on the apple to advantage, but if they could dispense with it on the plum he thought it best to do so. He quoted an experience of his own, where in spraying on the plum he came very near losing the crop. He had observed for a number of years that scab fungus developed on the branches that blossomed and the contiguous foliage, which convinced him that it developed there quicker than any place else.

Prof. Saunders stated that fruit was very often seriously injured by the growth of the scab after the fruit was barreled. That may be prevented before barreling by burning a little sulphur in the packing-room, the sulphurous acid vapors permeating the fungus. He had never found spraying to injure plum trees.

The mixture must be agitated constantly. If the arsenites were used strong enough, of course they would injure the leaves. There is no danger in using one pound of Paris green to 200 gallons of water on the foliage of the plum, or of the rose; but he would not say so much for London purple, it varies so in strength. Carbonate of copper, used in its insoluble form, gives the same result as where dissolved with ammonia. Copper salts are not so very poisonous, and are not to be classed with arsenical preparations. There was a distinction to be drawn between the use of copper salts and arsenical salts. He did not think there was any danger in using carbonate of copper, in proper proportion, for the destruction of this scab fungus. He did not think the fungus fed on pollen. Still the facts brought forward by Mr. Hooker seemed to point to the conclusions that gentleman had reached.

Mr. D. G. Fairchild, representing the Department of Agriculture at Washington, made the following points:

- I. Arsenites are injurious because of the arsenic acid.
- II. Lime is a neutralizer for this acid.
- III. Chemical aniline dye manufacturers will perhaps learn to use more lime, and thus neutralize the arsenic acid.
- IV. Carbonate of copper in *suspension* proved ineffectual in Virginia with them the past year, but ammoniacal solutions were very effective.
- V. Apple scab fungus and pear scab fungus are not the same.

NIAGARA COUNTY REPORT.

This report, prepared by Mr. I. H. Babcock, was read by Mr. B. W. Clark. It stated that with more acreage of orchards compared with area than any other county in the United States, this county with its great apple orchards had, during the past year, to buy apples even for home consumption from the west, something that had never before occurred. After the summer apples, not a barrel of merchantable fruit was harvested. The pear crop was unsatisfactory, probably due to heavy rains. Messrs. Moody & Sons, from 220 Keiffer trees marketed 630 bushel kegs, which sold at an average of three dollars per keg. This was the fourth crop on trees seven years grafted. Plums were only a partial crop, still this firm just named sold 2,000 bushels of Lombard at three dollars per bushel, 1,000 bushels of Niagara and 300 of Reine Claude at six dollars per bushel. From the Geo. W. Bowen orchard, Newfane, 2,200 8-lb. baskets of Lom-

bard and Reine Claude were sold for \$1,000, and 2,000 baskets of peaches realizing \$2,500. This orchard is located midway between Mountain Ridge and Lake Ontario, on light sandy soil. The ground receives garden culture to about August 1st, when cultivation ceases entirely, and the trees are grubbed regularly every spring. They were also sprayed with a solution of Paris green and Babbitt 76 mixture. In addition to all this, the plat of peaches and plums receives yearly an application of one thousand bushels of unleached ashes, besides some stable manure. It does not suffer from curled leaf or the yellows. Grape growing was receiving increased attention in Niagara county, especially north of what was known as the mountain ridge. Everything is favorable to the grape, and frosts hold off two to three weeks later there than in other localities. The report emphasized the value of the Niagara grape, which was originated by Mr. Hoag of Lockport, the original vine of which bore a large crop last year, and had never missed more than one crop, and then on account of late spring frosts. The small fruit crop of the county was small, but high prices compensated in part for the failure in quantity.

Mr. Hoag wished to correct the statement as to the failure of the original vine of the Niagara to fruit last year. It had never failed. He also stated that credit for introducing the Niagara should be equally shared with Mr. Clark and himself.

Mr. Barry was glad to claim these gentlemen, the originators of the Niagara, as members of the Western New York Horticultural Society.

EVENING SESSION.

Mr. Barry introduced to the society Mr. D. G. Fairchild, from the Department of Vegetable Pathology, at Washington, D. C., who presented the following paper:

DISEASES OF THE GRAPE IN WESTERN NEW YORK.

The grape vine, although perhaps in many ways the most obedient of woody cultivations, is at the same time liable to numerous dangerous diseases. While it may be made to assume almost any form upon the trellises, it requires careful protection from the host of fungous enemies which beset almost every cultivated plant. There are recorded for the United States alone over fifty distinct species of fungi which have been found growing upon *Vitis Labrusca*, and while many of these grow only upon the dead canes or leaves, numerous distinctly parasitic forms are found, which it is the purpose of this paper to deal with briefly, touching only those as are of such abundance in this locality as to cause serious damage; and first, that we may better understand the nature of the thing spoken of, it will be best to define a parasitic fungus. All fungi are plants and not insects, and differ from common flowering herbs in the absence of green leaves, green stems, and flowers. They may be divided into two groups, parasitic and saprophytic, that is, growing upon living matter or upon dead matter, and it is in the former of these groups (parasitic), almost exclusively, that the horticulturist is interested.

Downy mildew (*Peronospora viticola*, B. & C.)—Perhaps the first disease caused by one of these parasitic fungi, both in abundance and productiveness in this region is the downy mildew. This disease, called also grey rot in its early stages upon the berry, and brown rot in its later, has been well known both in America and Europe for many years and, in fact, stands to-day as one of the best understood fungous diseases of cultivated crops. The whole story of its life as revealed by the microscope is in brief as fol-

lows: Into a region where for years perhaps grape vines have been grown luxuriantly without a sign of disease the winter wind blows from some distant region where the downy mildew is present a dried leaf in which are buried the spores or seeds of the minute fungus. This leaf caught by the trellis is beaten to the earth by the spring rains and gradually decays, and by the time the young leaves of the vines upon the trellis above have begun to expand, it has become completely disintegrated and has loosened from their long resting places the hosts of spores which were contained. These spores which are contained in small spherical sacs, are blown by the wind upon the soft green surface of the leaves, where in the warm moist atmosphere of spring they creep out and swim about in the drops of moisture which collect upon the under side of the leaf. After roaming about for a few hours they come to rest upon some favorable spot and grow, sending out a minute rootlet or germ thread into the tissue of the leaf much as a small seed would send its root into the soil. When once beneath the skin of the leaf, the root (hypha) begins to branch as a root of the higher plants branches, and sends into the cells of the leaf short branchlets or suckers which absorb from these cells the nutrition which had been sent from the stem below for the growth of the leaf.

As the growth of this tiny plant continues it sends up from its mycelium or root system innumerable branches through the breathing pores of the leaf which bear upon their branching tips countless thousands of shining white spores called summer spores because produced only in the summer season. These summer spores, which have doubtless been seen by many present upon examining the underside of mildewed leaves, as a shining white powder, have very tender skins and are easily destroyed, but if allowed to rest upon a healthy leaf in a drop of water or in moist air grow at once and form new fungous plants which in time kill the leaf either wholly or in part. These summer spores which, as just mentioned, are produced in countless thousands, are blown from this one leaf perhaps in a single day over the entire vineyard, infecting occasional leaves upon almost every vine. From these newly infected leaves the fungus spreads until the foliage of the vineyard is entirely destroyed. This mode of summer fruiting is continued by the parasite until late in the autumn, when within the leaf are formed in small sacks or balls with tough leathery coats the hardy winter spores which are capable of living through the winter and infecting, as before described, new vineyards the following spring. Thus is completed the life cycle of this well known fungus, and it may be said in this connection that in a general way this represents the history of the great majority of these fungi which attack cultivated plants.

When we are acquainted with all the habits of any obnoxious plant we may begin systematic and intelligent efforts to eradicate it, but not until then. So it is not until we fully understand every step in the life history of a disease that we can expect to be successful in preventing it.

From a study of the above outlined life history it would be evident to any intelligent observer that all diseased leaves and berries should be burned in the fall in order to kill the winter spores, and it would also be evident that any mixture spread upon the young leaves before they have become diseased, if it was of such a nature that the fungus could not grow through, it would prevent the spread of the trouble to all leaves covered with such a mixture. If these two ideas were continually kept in mind in the treat-

ment, not only of downy mildew but of the majority of fungous diseases, the many grave errors which are constantly arising would be avoided.

The powdery mildew (*Ucinula spiralis*, B. & C.)—This disease differs from the previous one materially in that it is entirely superficial in its habit of growth, living almost wholly upon the outside of the leaves and fruit of the grape, causing the dirty white coatings so well known to all grape growers. From an inspection last fall of numerous vineyards through this section, the powdery mildew appears to be one of your most abundant pests, and except in vineyards treated with the mixture of blue vitriol seems to ruin many clusters for market purposes. The life history is similar to that of the downy mildew, with the exception that the winter spores, which in the downy mildew are formed within the leaf, are built upon its surface and can be easily seen with the naked eye if sought for late in the fall. These winter spores which are contained in little covered basket like bodies about the size of a pin point are washed to the ground from the leaves while yet hanging to the vines and remain dormant until the following spring, when they are blown upon the leaves and germinate, spreading their threads over its surface and clinging by small suckers to its upper skin (epidermis). Through these small suckers which are the only parts of the fungus which enter the grape leaf, is the sap drawn upon which the fungus lives and without which the leaf dies. After the young parasite has gained a foothold upon the grape leaf, it begins immediately to send up short branches into the air which form in countless numbers the second kind of spores (summer spores) which are capable, when blown upon healthy leaves or berries, of infecting them and causing new diseased spots. In the fall, again, after these summer spores have been produced for many weeks, the small baskets of winter spores are formed, ready the next spring to begin their life cycle anew.

Black rot [*Laestadia Bidwellii* (Ell.) V. & R.]—This destructive disease, especially dreaded by vine growers of the Southern states where the long humid springs nourish the rapid growth of the little parasite, is beginning to make its appearance slowly in many vineyards of Western New York, and although it may be doubted if it will ever prove so severe a pest in the colder latitudes as it has been in the South, its progress will be watched with suspicion.

The life history of this fungus, which is purely an American one and has probably lived for many years previous to its discovery in the vineyards upon the wild grape vines of the United States, differs somewhat from that of the downy mildew. The winter spores, which in the case of the mildew are formed in the leaves, are contained in the black rot in little cavities or pustules in the black shriveled remains of the berries, which are so characteristic of the disease. These dried up berries which are generally allowed to drop to the ground since unfit for use, through the months of winter conceal thousands of minute sacks within each of which are a number of hibernating or resting spores, only awaiting the copious rains of spring to be loosened from the rotten mass of grape tissue and blown upon the green foliage which has made its appearance. When once upon the leaf, the spores grow and produce small round or oval brown spots not more than one quarter of an inch in diameter. In these spots are little pustules or pimples which exude in jelly-like masses myriads of little round spores which are washed down the stems or drip from the edge of the leaf upon the young grape clusters beneath. When these spores, washed down thus, have gained a favorable resting place upon the

berries they grow and send their threads into the soft pulp of the berry, causing it to turn brown, then black, and later to become covered with pustules, like those upon the leaves, which exude the spores in masses in a similar way. Sometimes only a part of a cluster is attacked, but on account of the multitude of spores formed in the berries, as just stated, more often whole clusters are diseased. These diseased clusters which fall to the ground have formed within them later the winter spores, ready the coming spring to spread the trouble again.

Gloeosporium of the grape (*Gloeosporium fructigenum*).—Closely related to the black rot in general appearance and often no doubt confounded with it, is a peculiar disease which, until the last year, has received practically no attention from mycologists. The fungus causing this disease which attacks the berries when they have begun to ripen and not, as in the case of black rot, while they are still not more than one half grown, causes the berries to soften and turn a dark shiny color often showing reddish pimples upon the surface. The tiny plant which causes the trouble is peculiar in finding a second home in the well known bitter rot spots of the apple, and if one of the apples with the characteristic large black rotten spot upon it were thrown into the vineyard or placed upon the post of one of the trellises, one might expect to find in the course of a few days signs of this disease upon the grape clusters. Unlike any other of the diseases of the grape, this one will be likely to spread after the grapes are created and await the attention of the packers. One diseased berry under favorable circumstances being able to infect a whole crate and render it unfit for market. The life history of the fungus is, so far as known, a short one. The young rootlets, or more properly fungous threads, penetrate the soft grape pulp and after living within the delicate substance for about seven days form spore pustules under the skin which finally break open and allow myriads of minute pink spores to escape, which when washed upon healthy berries, grow and produce similar diseased spots and similar pustules. This new disease, unless guarded against, may prove to the Northern states what the black rot has been to the Southern, and demands attention from all grape growers.

The Authracose, which has in some parts of the state been bitterly complained of, is not, so far as seen, in this section nearly so destructive as other diseases, but from the fact that it has proved a difficult one to deal with should be looked after with scrutiny. In nature it is very like the *gloeosporium* disease just mentioned, only inhabiting both stems, leaves and fruit, causing large irregular dark patches sunken beneath the surface and often containing greyish white centers. The fungus which is a very low form is propagated from plant to plant by spores which are blown by the wind and require moisture in order to germinate. No winter stage has, as yet, been discovered for this fungus.

SUMMARY OF THE NATURE OF FUNGUS GROWTHS.

After this somewhat hasty outline of the nature of these low forms of life as causes of grape diseases let us look at what has been done and may be done in the prevention of these pests which when unknown seem so mysterious and threatening. An intelligent understanding of what these plants are and how they live is absolutely essential to success in the treatment of them.

At the outset let it be understood as a fact now acknowledged by all students of these fungous diseases, that after the fungus has once gained an entrance to the inside of the plant any amount of manuring or

cultivating cannot prevent the portion diseased from being lost. These diseases are similar to cancers upon animals, and not to fevers or such maladies as affect the whole blood system. Since one can take upon the point of a needle a few spores from a diseased leaf and put them upon a healthy leaf which has no connection with the plant, place it under a tumbler for a few days with the stem in water to prevent it from wilting, and secure the characteristic spots of the same disease, can anyone doubt that the trouble is merely a local one and not in any way connected with the sap circulation, and when added to this fact is the one also equally well known that leaves and branches absolutely protected by paper sacks or bell jars do not suffer from these diseases, is there room left for a single doubt?

THE TREATMENT.

From the foregoing it follows that treatments must be altogether preventive—the invariable answer to the often asked question—“what is the cure for this or that disease,” is, “there is none, only a preventive.” For downy mildew (which term may be used for both brown rot and grey rot), *authracose*, black rot, powdery mildew and the grape *gloeosporium*, the following methods of treatment cannot fail to bring favorable results.

I. In the fall at pruning time remove from the vineyard every vestige of diseased canes, leaves or dessicated berries and either burn them, which is preferable, or bury them deeply in the earth. By all means avoid leaving them exposed where the wind can scatter the leaves back towards the vineyard, and do not, under any circumstances, incorporate the *débris* with the compost which is to be used upon the vineyard in the winter or spring.

II. Spray the vines thoroughly, by means of any of the well known force pumps, with one of the copper mixtures.

From past experience the solution of copper carbonate in ammonia water is to be highly recommended as being effective and at the same time the most economical of all the copper mixtures.

The prescribed formula has hitherto been 3 ounces of the carbonate dissolved in one quart of 20 per cent. ammonia water and diluted with 22 gallons of water, but a better one, as later investigations have proved, would be to dissolve 5 ounces of copper carbonate in three pints of the strongest water of ammonia, 26 per cent., and dilute with 50 gallons of water, since the 26 per cent. contains proportionately more ammonia gas than the 20 per cent. per dollar's worth.

The practice of buying all chemicals from wholesale houses has no doubt suggested itself as a most economical one, since no loss is incurred from keeping copper carbonate or ammonia from one year to the next.

As several chemical firms have shown a disposition to take hold of the matter of manufacturing a more convenient fungicide, it is to be hoped that before another season ten pound cans of a mixture equivalent to the ammoniacal solution will be put upon the market at reasonable prices.

To many, no doubt, these formulæ are familiar and have probably received various modifications, but the percentage of copper, which is the active principle of the solution, is doubtless near the minimum quantity for safety. A lessening of this per gallon of water will endanger the vines to the attacks of the various diseases.

For the Southern states where the black rot ravages the vineyards to such an extent that the entire crop is often lost, six and even eight sprayings are none too many to keep back the powerful parasite;

but in these cooler latitudes where this fungus does not seem to flourish so luxuriantly and where the downy mildew, powdery mildew and anthracnose are the worst pests, four sprayings, if thoroughly done, may suffice. However, no hard and fast rule can be laid down in regard to the matter, for the abundance of the parasite and frequency and copiousness of the rains must modify the applications. In any case, however, the vines should be kept covered with the mixture, as only those parts which are covered with a coating of copper carbonate are protected from the parasite. As regards the time of application of the solution, the necessity of early spraying cannot be too strongly urged. Make the first application at least one week or ten days before the young buds have fully burst their winter coats, just as the red tips of the first leaves are beginning to show. If this precaution is taken the tender leaves, as they unfold slowly, have already upon them considerable quantities of the solution and are shielded, from birth as it were, from the attacks of the parasite, whose winter rest has been so timed that it is actively at work from the first swelling of the buds.

The second spraying may be postponed until after the leaves are about one inch to an inch and a half in diameter, but not later, as a day's growth of the fungus upon a few tender leaves at this period will cause great trouble subsequently, acting as seed beds for the propagation of the trouble. Later, when the flowers have fully opened and the insects are busy about the clusters, the third spraying may be done without fear of injury to the blooms which have been fertilized before the caps have dropped off, and ten days or two weeks later when the fruit has attained the size of garden peas, the fourth application may be made. A fifth may be held in reserve in case the disease gains a foothold upon the vines.

If the above general outline of treatment is followed, modified in non-essentials according to the peculiarities of the season and locality, immunity from downy mildew, also called brown rot and grey rot, powdery mildew, black rot and the gloeosporium, which was mentioned as causing also the bitter rot of the apple, can be almost positively insured. As regards the anthracnose, which is in some sections the most serious pest, so many conflicting reports have come in that we are loth to promise such signal success but hope, in the near future, to prove this parasite as easily subject to the copper mixtures as those mentioned. Numerous other mixtures have been used against it, but as yet not sufficient accurate data is collected to warrant positive statements in regard to it. The destruction, by fire, of all diseased parts, however, is sure to bring most beneficial results as in the case of any other plant disease.

THE NEW DISEASE (ROUGEOT).

About the first of September, 1890, complaints reached the Department from numerous localities through Western New York, of a disease which was threatening the new and promising industry of grape growing in that region. Specimens were received from various parties and, although carefully examined, revealed no signs of any parasite active upon them. Accordingly, although so late in the season that many of the vineyards had been touched by the frost, an examination was made of numerous vineyards in different localities through the infected region and notes taken of the varying conditions under which the disease appeared. From a study of the trouble in October the following diagnosis may be made: The leaves first show the disease, manifesting at the outset irregular somewhat star-like red blotches between the veins which gradually enlarge, run to-

gether, at the same time becoming browner until finally they fill up the spaces between the main veins with a deep red-brown tissue, giving to the leaf a pronouncedly striped appearance. This striped look is quite characteristic and may often be noticed for several rods. Upon those vines diseased, the berries are of a decidedly insipid flavor, often intensely sour and drop from their stems, in the later stages, on the slightest touch. Badly diseased vines may often be distinguished by the layer of shriveled berries covering the earth beneath them.

The trouble is not entirely confined to cold, heavy soils, although seemingly worse upon such land, nor is it connected, so far as can be ascertained, with the use or absence of any fertilizers. The shade, which is afforded by foliage trees and houses, although in one or two cases seeming to afford protection, cannot be surely connected with it. Examinations of the roots of many diseased and healthy plants, while revealing the fact that the young fibrils had almost entirely rotted away in case of the diseased, and were only partially decayed upon the healthy, have shown no parasite of a nature adequate to cause the injury.

In some respects the disease resembles that which lately appeared in California and threatened the grape interest of that state, and until one or both are more fully worked out, must stand in the same general category.

Comparing it with the description of the French malady known as *Rougeot*, it is found to possess many points of resemblance and as such, noticed in the Southern Atlantic states, was probably considered by the eminent French viticulturist, Viala, in his journey through the United States. In the judgment of this viticulturist, *rougeot* follows as a concomitant a sudden lowering of the temperature in midsummer when the vines, loaded with fruit, are in full growth and is much more likely to occur upon heavy ill-drained soils than upon light well drained land. Both Viala and Foëx consider it nearly related to *appoplexie* and recommend as the surest preventive from its attacks thorough underdraining. If the wood has failed to mature, and enough bearing wood cannot be secured to furnish good healthy canes, the wisest plan will be to prune close to the ground and raise an entirely new growth.

Although considerable time and attention has been paid to the class of diseases to which this new disease properly belongs, the prime cause, whether of a bacterial nature or physiological, is not positively known, and until a longer time for experimental research is afforded, the trouble must remain only partially explained. Whether or not the malady will appear again through the vineyards of this section next year it will be impossible to predict, but should it make its appearance the opportunity cannot be lost of studying it in all its characteristics and finding a specific remedy.

Mr. McMillan asked the speaker if downy mildew ever attacked the fruit and not the foliage?

* Mr. Fairchild—"You might find it on a cluster of fruit and not on the leaves above, but in the whole vineyard you would find it somewhere on the leaf. It does not appear on the berries when appearing on the foliage."

Replying to other questions, the speaker said: It is not the same mildew as is found on the gooseberry, but is nearly related and so nearly like it as to render it difficult to tell it. The ammoniacal solution can be used as a remedy in both cases. In the case of the downy mildew the application should reach all portions of the leaf. This solution will

never hurt the foliage when properly prepared. If you make a solution of copper sulphate, in the proportion of six pounds to twenty-two gallons, and spread on the leaves, you will lose the leaves. The acids are extremely injurious to foliage and must be neutralized.

Being asked in reference to the use of lime in mixtures, Mr. Fairchild said: Lime is put in to neutralize the acid, because unless neutralized, you lose the leaf. The difficulty experienced by the questioner in getting lime through his pump might have arisen from having too much, or it might have been left too long and settled, thus clogging the pump. The Bordeaux mixture will do this. The Vermorel nozzle is the only one that will throw a Bordeaux spray. The experiments show that the ammoniacal solution is effective in the pear and leaf blight. Two or three sprayings are sufficient in an ordinary season. For leaf blight it should be used as soon as the leaves are well formed. The apple scab fungus has been well controlled by the ammoniacal solution, without damage to fruit.

Replying to questions concerning how best to obtain the material, Mr. G. C. Snow stated that he had his carbonate of copper prepared by the druggist in his town without any difficulty.

Prof. Saunders said that any man who knew enough to make a cup of tea could easily prepare the mixture.

In answer to other questions Mr. Fairchild said there was no remedy for twig blight except to cut off and burn. Great care must be exercised in being particular not to leave any of the affected twigs lying around on the ground. He should not think plowing under a reliable experiment, because there was a possibility that spores might live more than one year, and hence the practice of plowing under might prove dangerous.

Prof. Saunders paid Mr. Fairchild a very high compliment for his paper, and moved a vote of thanks.

Prof. Bailey seconded, remarking that the paper had given them some indication of what the Department of Agriculture at Washington was doing. He did not think the people appreciated the work that was being done. The paper was a specimen of only one branch of the department, and there were other branches equally as energetic, the work of which was of direct value to farmers of every kind. The character of the work was known all the world over, the men engaged being specialists and to be fully relied upon, the results of whose work were simply astonishing. After listening to the able paper of Mr. Fairchild, he thought they would be more inclined to support the department.

Mr. Hunt said he had heard a Hudson River vineyardist say that he had realized \$4,000 from his vineyard that he would not have had but for the information he had obtained from the Department of Agriculture.

Mr. Barry feared they were all slow to appreciate what was being done in these educational institutions. It often happened that they found fault with the theories and teachings of these institutions, but when they learned of the experiments being practically carried out, as narrated by Mr. Fairchild, they could not but admit that the experiment stations were doing good for this great country. It meant good not alone for the fruit grower, but for everyone in the land. They must, therefore, encourage these institutions more.

The vote of thanks being called for was heartily adopted.

PRAIRIE GARDEN NOTES.

It is common in these prairie countries to hear women, who in all new settlements must perforce be the gardeners, say: "Back east you have only to stick a thing in the ground and it will grow, but here nothing grows." Twenty years ago I heard the same complaint from men concerning orchards, yet now Kansas ranks high as a fruit state and new varieties originated here are catalogued and praised by eastern pomologists.

This article will give the experience of one who has found at least a measure of success. Our first orchard was burned up in a fierce prairie fire, which was particularly discouraging as it had just begun to bear, but the second, planted nearer to the house some twelve years ago, has been bearing well for five years, and gave us some fruit before that. As with the orchard so with the garden, labor and study bring their own reward.

What, then, are the difficulties which discourage the gardener in prairie settlements of the west? Simply expressed it is all in the openness of the situation. The early settler took up all the land along the creek bottoms, and for the later comer the garden spot surrounding the "little sod shanty on the claim" stands open to the fierce sun of summer and the far worse drying winds, beginning early in the season, to the winter, bare of snow most of the time, and a thermometer ranging from 98 above to 30 below zero, and performing surprising gymnastic feats in its travels.

Fenceless also this garden is save sometimes for a wire or two stretched on far distanced posts, which serves only to keep out larger animals, leaving it open to the no less damaging small fry, chief of which is woman's bugbear, the omnipresent hog; open too, alas, to the unmanageable animal on two legs, which Mr. Vick, Sen., long ago pictured in his catalogue with hoe on shoulder and one foot in the flower bed, taking, presumably, a short cut to the field. That this animal is still kept on western farms is, I find, a fact, for I read recently in a home paper a description of that picture from a woman who added "that is my husband exactly." The inference is that nothing can be done without a fence and it is about correct. Let village improvement societies tear down their fences if they will, they would

improve on their improvements if they would load up their fence material and ship it to the literally *de-fence*-less prairies.

Now, how shall a woman who has little money, strength or time, proceed to garden against all these difficulties? In my own case the fence had to wait, but I had a chance to get slips in quantity and some rooted plants of the Lombardy Poplar, (and here let me speak a good word for this tree, despised as I find it is by some,) they were easily within a woman's handling and grow readily from slips, and I planted them thickly on the south and west, on the east were three or four rows of seedling peaches, and in two years I had a very fair windbreak; the habit of growth of both peach and poplar breaking the force of the wind near the ground; the break was not needed on the east so much, but was never objectionable even there; but those who can have a site with eastern or northern slope should avail themselves of it, and will find gardening less difficult than with slope to west or south; in any case I should want a southern windbreak and especially southwestern. Failing the peaches and poplars, seed of native trees, preferably box elder, maple and ash, are easily obtained in the timber adjoining streams, are rapid in growth and if thickly sown will take the place of a fence. Unless protected in some way it is useless to plant seeds of small plants in the open, they may come up in a night and an hour's wind so whip the little plants off the face of the earth that you might think the seeds did not germinate and blame the seedsman.

I have always started my seeds in a bed lying along the east side of the house, boarded up higher than the earth and covered also by boards during wind, leaving a space on the lee side for air and light. Those which must be planted in open ground should be watched, and when whipped by wind have the earth drawn up closely around them by a hoe until they become stocky enough to withstand it. After a year or two experience in picking up pea vines, driven into the mud by heavy rain and wind, to gather my peas, I decided that hereafter they should be brushed. There was plenty of peach brush at hand and I tried it. I think I get more peas even from dwarfs by giving support, but every year I have

to personally superintend the cutting and setting of that brush. Cut too long and weak, or too top-heavy, or not firmly set, when loaded with its vines it is easily blown over by the wind which accompanies or follows our rains. I set my brush before planting the peas, in the bottom of the trench made for them; cut stout sticks, leaving only just enough twigs for the tendrils of the pea to catch on, set down firm in the bottom of the trench, sow the peas and hoe the earth well over and the sticks are firmly held. Rows of peas well brushed in this way can be used to shelter early small plants, and if the garden is late corn may answer the same purpose. But seed planting in this latitude, 38-40, should not be delayed till the sun gets hot, I would rather risk slight frost than the hot sun on young seedlings. My best success has always been obtained by early planting of anything but the tropical seeds and plants; our seasons give us about two weeks of time in advance of that specified in eastern catalogues.

Small fruit, save perhaps the grape and strawberry, need protection from southern wind and sun. The bark of early Richmond trees, and some other cherries, splits badly on the side exposed to it; the currant will not live in it at all, and few of our flowering shrubs are uninjured by it. The syringa (*philadelphus*) loses its leaves and blossoms, and the early tender leaves of the lilac suffer, though the flower escapes.

Melons, squashes and the like, need not occupy space in the garden, they will do their best when planted on new broken land. Take a pointed stick and make holes in the upturned face of the sod, drop in the seed and firm it down with the foot and the work is done till gathering time. It is rarely any insect, save the small boy, molests them on new ground.

The prairie settler who longs for the garden pets of the old home must exercise patience; few of the older States or countries have the climatic conditions of the prairie; the tempering winds of the ocean do not reach us, instead we have winds from over hundreds of miles of sandy country overlooked by hot suns, daily and yearly modified and softened; every settler who plants a few trees helping on the good work, and seldom we who came here twenty years ago find anything we want to grow for which a

suitable location can not be found; some knowledge of the requirements of a plant should be had, and may easily be gained by studying nothing more than a catalogue, then give each the nearest you have to their native habitat.

Many hardy flowering plants, such as hollyhock and campanula, if planted where our warm sun has full power on them, say on the south side of a fence, will leaf out in midwinter only to be destroyed by later cold weather. The way to have such plants thrive is to grow them where they will not get much sun after early morning. The north side of a fence is best.

Cover the strawberries and tulip beds or other plants exposed to the sun with leaves, hay or some such material, but do not put it on until after frost and avoid covering the crown or heart of the plant heavily. Many of these live in severer climates when covered with snow, but this we cannot count on, so the leafy covering must take its place.

SILEXIA ENGLISH.

PRIZE VIEWS OF BAD ROADS.

The League of American Wheelman offers three prizes of \$50, \$30 and \$20 for collections of photographs, of not less than three each, showing bad roads and the difficulties that teamsters and farmers have to meet in connection with such roads. Photographs must be submitted on or before May 1, 1891, at which time competition closes. Full information on the subject will be furnished on application to Isaac B. Potter, 278 Potter Building, New York, or Charles L. Burdett, Hartford, Conn.

HORTICULTURAL REPORT.

Eight pages have been added to this month's MAGAZINE to give room for a portion of the report of the late meeting of the Western New York Horticultural Society. The whole of the proceedings of this meeting were full of interest and importance to fruit growers and to all who intend to plant or cultivate fruit trees even in a small way. There is much in it, also, to interest amateurs with fruit and ornamental trees. Attention to the diseases which affect our fruit trees and vines is now so imperative, we have thought no better service could be rendered our readers than to lay before them

as much of this report as possible at the earliest opportunity. More will be given next month.

Acting President Willard in his address appropriately and feelingly noticed the members who had died since the last meeting in the following words:

"It becomes our painful duty on this occasion to record the death of several members of such prominence and essential worth that more than a passing notice must at this time be given each. Patrick Barry of Rochester, Robert J. Swan of Geneva, John B. Dixon of Geneva and Luther E. Barber of East Bloomfield, will no more meet with us in this assembly chamber, each of them men who, in their respective vocations of life, discharged their duties with such fidelity that long time must elapse ere their names can be forgotten.

"Little did we think a year since that before another twelvemonth should have passed we should have been called to mourn the loss of our beloved president. Patrick Barry on the morning of June 23d last passed away to his heavenly home, and the accustomed cordial greeting ever extended to you at eleven o'clock in the morning as here assembled, by him, whose interest in the welfare of this society was greater than that of any other member, you shall experience no more. It is well, therefore, that on this occasion a slight tribute of our appreciation of the services of this great and good man should appear on our records. To do justice, however, to the life and work of such a character is beyond the reach of a mind and pen so feeble as mine."

The speaker closed by giving extended sketches of the lives of the deceased members.

The following is a list of the officers elected for the present year:

President—W. C. Barry, Rochester.

Vice-presidents—S. D. Willard, Geneva; W. Brown Smith, Syracuse; George A. Sweet, Dansville; C. L. Hoag, Lockport.

Secretary and treasurer—John Hall, Rochester.

Executive committee—C. M. Hooker, Rochester; B. W. Clark, Lockport; C. W. Stewart, Newark; Nelson Bogue, Batavia; W. S. Little, Rochester; William P. Rupert, Lima; E. A. Powell, Syracuse; T. S. Hubbard, Fredonia; Nelson Smith, Geneva.

THE TREES OF N. E. AMERICA.

"C—, if you and I were to meet a man on the street and ask him his name, he could tell us. I wish a tree could do as much. Here are splendid specimens all around us, and I don't know one of them."

"Get a book that will help you."

"I cannot find such a book. I can find no book which, in simple fashion, will so describe the tree, from its foliage and bark and style, that I can recognize it."

"Then I will make one for you."

Such is the commencement of the preface of a handsome book with the title above, written by Charles S. Newhall,

and lately published by G. P. Putnam's Sons, New York.

We are pleased to say the promise of the preface is made good throughout the book. Two hundred and fifty pages of reading matter and engravings, with a good index, comprise good descriptions of all the native trees of Canada and the Northern United States east of the Mississippi river, and also the more important of the introduced and naturalized species. The writer has endeavored to use simple English words in his descriptions, as equivalents for most botanical terms, and has succeeded so well that any intelligent reader, by reference to this book, may identify any particular tree of the region referred to. The scheme of analysis by means of the leaves is a good one, well executed and will prove useful. We regard this as an excellent, practical book which cannot be too widely known or employed. Anyone interested in trees can consult it to advantage, and its use will have a tendency to lead to botanical study proper. It is a book that should be in every family and school library.

SCOTCH BROOM IN WASHINGTON.

I would like to call your attention to two plants which grow here. The first is a shrub of slender, bushy habit, called here Scotch Broom. It is evergreen except that the leaves fall in the dry season. The flowers are about the size and shape of a small pea blossom, and in color a bright yellow, they completely cover the bush making it one mass of gold when in full bloom.

I do not think it is strictly a native, though it grows wild in pastures and uncultivated fields, on sandy uplands, wherever I have noticed it. It was probably introduced here at some time from the old country, where, I am told, they did really make brooms of it. It adapts itself perfectly to our section though growing 6 to 8 feet high sometimes. Common as it is, it has sufficient beauty to make it an ornamental shrub in our town yards. It is perfectly hardy here where the mercury seldom reaches zero, though we sometimes have considerable snow and freezing weather. In open winters it often blooms a little all the season through.

The other plant is a lily, called here Deer Tongue Lily. It grows on the same soil and under the same conditions as the shrub. The blossom is white, the foliage tongue-shaped and spotted. Now, possibly these are neither of them new to you. I will send some twigs of the Scotch Broom that you may see. They may both have been tried and found wanting for general culture, but if they have not and some plants and bulbs would be acceptable for experiment I should be very glad to send them to you.

MRS. A. E. S., *Tumwater, Thurston Co., Wash.*

From the specimen received we have no reason to doubt that the first mentioned plant is the genuine common

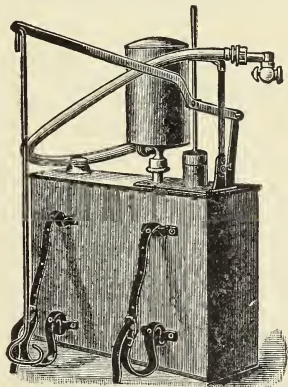
broom of Europe, *Spartium scoparium* of Linnæus, and *Cytisus scoparius* of later authors. Evidently it has found a congenial home in the new Western state. This plant will not survive many of our winters here at the East. We have known it to live for a few years in a poor way and then perish.

The Deer Tongue Lily described is probably an *erythronium*.

THE FIELD KNAPSACK SPRAYER.

A considerable number of kinds of spraying apparatus have been placed on the market to supply the demand of fruit growers and gardeners, and all of them have their own peculiar merits.

For small places, and especially for vineyards on somewhat steep hillsides, a form called a knapsack sprayer has been received with favor. A good form of this style of sprayer was examined by us, a short time since, and it apparently combines about all the desirable features of such an apparatus. It is made by the Field Force Pump Co., of Lockport, N. Y., and an illustration of it is here shown.



The tank is made entirely of copper and holds six gallons; it is furnished with two leather straps to carry easily upon the back, and when filled with liquid weighs about sixty pounds.

The pump is made entirely of brass and copper, and all its parts are so constructed that they can be easily detached and separated. To the air chamber is attached a discharge hose which is fitted with a Vermorel nozzle. The lower valve of this pump is made entirely of copper and brass, without leather or rubber packing, the only leather used being a small ring in the plunger valve. There is also

a ball valve used in the air chamber. The compression of the air in the air chamber causes the water to be driven through the discharge hose and nozzle with great force, and by the use of the Vermorel nozzle the finest, misty spray is produced. The large capacity of the air chamber holds in reserve sufficient power to keep up the pressure and continues to discharge the spray for fully one minute after the operator stops pumping.

The entire pump is securely soldered to a brass plate fastened to the top of the tank by screws, and can be easily removed.

PLANT INQUIRIES.

E. V. M., Wellsville, Mo., enquires the name of a plant which is the variegated Japan *Euonymus*, *Euonymus Sieboldii* variety, *variegata*. As to its being a blooming plant which the writer enquires, it may be said that it belongs to the flowering plants. Its flowers, however, are not very conspicuous, and so far as we know it has not bloomed under house culture. The plant is admired for its foliage.

The name *cyclamen* is pronounced with the accent on the first syllable, *cy*.

It is an advantage to wash the leaves of the *cyclamen* when rusty.

We can only surmise the cause of the buds of the *cyclamen* falling off when small, since but little account is given of the treatment the plant receives; the pots may not have drainage, and consequently the roots be water-clogged and comparatively inactive; or, what perhaps is most likely the case, the plant is kept in too high a temperature. Atmosphere of 60° is warm enough. The plant should have a good light—a full exposure to the sun—and as it has not had this and has been well watered, we think we cannot be far out of the way in saying that too much water, with too little sunlight and too high a temperature have formed a combination of bad conditions which have enfeebled it and made it unable to perfect its flowers.

The poor conditions named above for the *cyclamen* probably affect unfavorably also the primrose, which "loses its old leaves as fast as the new ones come out," and the rose which never fully opened its buds. Good drainage, good light and a

rather cool temperature are necessary for all the plants named.

MOTHS AND BUTTERFLIES.

We wish that our younger readers, at least, could have the pleasure of reading a most entertaining book with this title, written by Julia P. Ballard and published by G. P. Putnam's Sons of New York. To know more or less about insects is becoming a necessity to those engaged in rural pursuits. If the acquisition of such knowledge can be made a pleasure we may hope that the young people of to-day may better prepare themselves in this respect, at least, for their life work, than their predecessors. No one can read the book mentioned without becoming interested in insect life. Mrs. Ballard has the happy faculty of imparting information in such a way as to make you relish it and hunger for more. The book is beautifully written, printed and illustrated, and wonderful things about moths and butterflies are told in such a way as to engage our interest in the actual observation of them.

The book reads more like a story than a work of science, and a story it is, but one that is capable of leading us into a realm of study as fascinating as it is important and vast.

VERANDA BOXES.

A well sheltered veranda space is a favorite place for house plants in summer with many ladies, and most frequently plants do well there. Sometimes a veranda is so exposed to the sun or to bad winds that plants do not thrive well there, but in all cases where they do they are ornamental, and, besides, they are where they can easily receive the attention they need. Within a few years there has commenced a practice, which we regard as a pretty one, of having long narrow boxes supported in front of the veranda rail and filled with blooming and trailing plants, which make a fine show all the summer and fall. These boxes are made about six inches deep and eight inches wide and any desired length that the space permits.

Those anticipating the use of such boxes should remember to be in time with plants which are to be raised from seeds. Trailing plants are particularly useful for this purpose and *tropæolums*, *maurandyas*,

and thunbergias and nolas are particularly desirable. Petunias can be grown to advantage, and Phlox Drummondii, blue lobelias, mignonette, godetias, sweet alyssum, Fenzlia dianthiflora, nierenbergia, and other low-growing annuals.

A few plants of geraniums, fuchsias, and heliotropes can be made conspicuous, and also tuberous begonias and abutilons. Oxalis floribunda, Tradescantia zebrina and the green and the variegated periwinkles, and Vinca minor are also good trailing plants. The above are some of the best for the purpose, but there others which will do well and one can exercise his individual taste and preference.

PLANT QUERIES.

1. I have a purple oleander about eight inches tall, rooted last summer, also a yellow one the same age; this one has two branches about three inches long. Should the tips of both these plants be cut off in spring?

2. After Liliun Harrisii commences growth, should the soil be enriched with liquid manure?

3. What treatment shall I give small bulbs of different varieties of amaryllis to hasten the blooming period?

4. If hollyhock and lychnis seed are sowed in February and given good care till time to transplant, will they blossom next summer or fall? RAE.

1. The ends of the shoots of oleander may be shortened in a little and the tendency will be to make them branch

2. If the bulb is potted in proper soil it should make its growth without further assistance, but when it commences to bloom it may be watered with weak manure water.

3. Amaryllis bulbs are usually of slow growth and it is not well to try to force them. They require to become large and strong before blooming.

4. The lychnis undoubtedly will bloom in summer, but the hollyhock not until the following season.

MARCH WORK.

Tree and vine pruning should be completed this month before growth commences. Peas for an early crop need to be got in as early as the ground can be worked. The wrinkled or sugar peas should be held until the ground warms a little. Those intending to raise onions by the new plan of starting the seeds in cold frames, should have everything in readiness and get the seed in early, and have the young plants in readiness to set

out as soon as the ground can be put in good order. The advantages claimed by this method are full rows, a longer season of growth and less expense in cultivating and keeping clean—the expense saved in the last item making up for the extra cost of transplanting. A much greater yield is claimed for the method. But no time is to be lost in preparing the soil for onion seed to be sowed in the rows where the crop is to grow. The preparation and sowing cannot be done too soon. The seeds of lettuce and early cabbage, cauliflower, celery, tomatoes, and radish will need sowing at intervals as required, and the hotbeds and the forcing pits will command daily care.

Seeds of biennial and perennial flowering plants can be put in at once, and also the tender annuals early or later in the month according to the latitude. Sweet peas in the open ground should be planted at the earliest opportunity; they should make their best growth in the cooler weather of the spring.

Lawns can be seeded to grass as soon as the ground can be properly put in order.

All kinds of work that can be done in the garden this month should be pushed along and be out of the way when the hurrying time comes later, as it surely will.

THE COLD WEATHER IN FRANCE.

The excessive cold weather of the past autumn and winter in France has caused immense damage to all horticultural interests. Market gardeners, flower growers and nurserymen have lost very heavily—in fact the losses from this source are greater than were ever before known. Great anxiety is felt for the wheat crop which has received severe injury, but the extent of which can only be fully known when the milder weather comes. Questions connected with reseeding much of the area in winter wheat with spring wheat are being considered, such as the sources for obtaining seed wheat, preparation of soil, time of sowing, etc. Apparently the coming wheat harvest of France will be considerably shortened as a result of the severe weather.

The facts here stated in regard to France are equally true of some other portions of Europe.

OUR YOUNG PEOPLE.

A NAMELESS STORY.

IN TWO CHAPTERS.—CHAPTER, I.

On low seats near a couch, where lay a precious life-long invalid, two sisters were pouring over a florist's catalogue, while a tiny little girl was saying:

"Well, if I can't have a canary bird for my truly own, then I want a canary vine, and you must send for one."

At this her elders laughed, and, as she retired to have a little pout all to herself over her slighted suggestion, the only brother, large and overgrown, came dashing through the room simply because it was a shorter cut for him just then than to go another way.

"Carl, do, please, be more quiet," said Isabel; "sister Blanche had a suffering night, and she is nervous this morning."

"O, you always make more fuss than she does, just because you want to find fault with me. Blanche, I didn't hurt you, did I?"

"Not much, brother, dear; but I wish, for your own sake, you'd learn, gentle, quiet ways."

"Ho, I can't be like a girl, and I'm glad I'm not one," and out he went, banging the door behind him.

"If he could only realize how I love him, and how mamma's heart is bound up in him," said Blanche, with hands clasped over her aching forehead, "I think it would soften him."

"He's too selfish for that," said Effie, "he's a perfect boor. I don't see how such a boy got into this family. If he were like some boys, we all should nearly worship him."

"You are too severe," said Blanche. "Remember, he's not yet fifteen. I expect him to change greatly in the next two years. If papa's business had not taken him so much from home he would have been kept under control."

"Yes, he's very demure in papa's presence, and that gentleman can't be made to realize that his son is ever anything else."

"He'll come out all right, you'll see; how can he help it, being in this family?"

and Blanche smiled at the presumption of her inexperience. "Now we'll go on with the catalogue. I looked it over yesterday, and noted several points."

Then spoke up Effie—"I've already made up my mind to let sentiment govern my selection of flower seeds this time."

"What an idea," responded Isabel, "I don't see how you can apply it practically."

"That's because you don't understand. Allow me to explain. The popular names of many old-time flowers express a meaning; for instance, there's mourning-widow, heartsease, four-o'clock, love-in-a-mist, poor-man's-weather glass, snow-on-the-mountains, bleeding heart and forget-me-not, besides others; you'll see; and I shall grow them by themselves and go over their human-sense names to my friends, all in one lingo, for a surprise. I think even Ruskin would enjoy it, for you remember he once said, or wrote, that he thought some of the jaw-breaking names appended to poor little innocent plants must be of the devil's own contriving."

"There's butter-and-eggs, you might add to your list," suggested Isabel, with a shrug. "I'm sure that name is expressive."

"You'd like to tease me, but you'll not do it. Indeed, I will have butter-and-eggs, though it doesn't belong to my class, and perhaps I shall flank it with cowslip and chickweed, henbane is too poisonous."

"That makes no difference. Do put a hen near the eggs for the 'sentiment' of the thing, and don't slight monkey flower, for that would enjoy making faces at your love-in-a-mist; but leave me catchfly, snapdragon, foxglove, blazing star and fire cracker plant, if you please."

"I will, never fear. But Blanche, dear," said Effie, turning to the sweet, winsome face, "have you nothing to say in approval of my plan?"

"O, yes; it's a pretty fancy, and I'm sure quite original. But I am wondering if your different selections will thrive equally well in the same location and with the same treatment."

"Just as well as when our great-grand-mothers raised them all together in one border."

"Perhaps so; but you must confess that they are so changed by high living and fine treatment (scientific, if you please), that they put on grand airs now-a-days, and hardly know each other when they meet in the same parterre, and possibly they've become more fastidious as to food and drink than formerly."

"I'll risk that; they shall all have good treatment, and you will see how they will thrive."

"I doubt it. I mean I doubt whether I shall see either their thriftiness or the reverse, as your flower beds and borders are always on the farther side of the grounds. This northern exposure is considered too cool and shady, you know, for anything but the turf that stretches over it, unbroken, year in and year out. For the same reason, no one has ever cared to try window plants here. And so everybody has tried to make up the deficiency by sending double quantities of cut-flowers to my room. I've had millions brought to me, but I don't know in the least how they grow, except as I have read of their habits."

"Why, Blanche Brewster! I never thought of it before," exclaimed Isabel. "And you've been longing to see them grow, and to study their habits and peculiarities? Of course, you have. And it would have helped pass away the time and given you something different to think about. We'll see whether nothing can be made to grow in this room," and she looked around and contemplated the two north windows very seriously.

"Why ferns grow in cool, shady places," she exclaimed; "they don't want the sun. And Mrs. Blake told me, last summer, that her day lilies do best on the north side of the house. I'm sure we can manage to find a number of things we can grow here."

"Bless your sweet heart, Isabel, don't get wrought up over this," said Blanche, taking her hand, "we'll talk it all over, some day, but not now. I know from my reading the names of more than a

dozen plants that like shade and moisture—twice that number, perhaps. So there'll be no trouble in that direction. But let us resume the catalogue discussion now, and get through with that."

"Yes, for we must get our order off today. Where were we?"

"Just discussing my proposed mixture of plants," said Effie.

"And I," said Blanche, "was about to propose that you add two or three memorial plants to your collection. They would embody sentiment of a pathetic kind. You could begin with one for Professor Gray, our own grand American botanist."

"Yes, but *one*? What plant would represent him especially—a man who was equally familiar with thousands?"

"I'll tell you. A certain geranium, with beautiful salmon-colored flowers, was long ago named the Asa Gray, by one of his admirers."

"O, I see; a lovely idea. Of course, I'll have that, and down goes the name in my list. What next?"

"A foreigner, Russian, I think, by the name of Eschscholtzia, died in California, far from home and friends, while searching for floral treasures. One of those he discovered (the California poppy) was named for him."

"Until this moment I have classed that dreadful name with those of satanic origin. It will never look so forbidding again. Poor man."

"Then there was the zealous Mr. Douglas, who added many prizes to the lists of florists, and who finally lost his life on one of the Sandwich Islands, by falling into a cattle-pit, while on a collecting tour. I know of no plant that has been dedicated to him, but yesterday I selected one that he found in California, for its brilliant, metallic-yellow flowers—the *Bartonia aurea*."

"Of course, I want that." Here Isabel interposed:

"And, of course, you'll want to set your mourning-brides and bleeding-hearts next to that group, so appropriate, you know. And here's a point for you. But first, Blanche, dear, aren't you getting weary? Mamma doesn't allow us to tire you."

"O, no, I'm so interested that it helps me to forget the pain."

"Well, then, I'll resume. Effie, if you

want to secure the long-throated Four o'clock—the pure white and the violet, and, of course, you do—you must order the *Mirabilis longiflora*. And here is something to know. 'The godetia, red, pink and white, blooms best in a poor soil.' "

"Glory! let's get pounds of it and scatter everywhere. Such a time as we do have to get this clay soil rich and mellow."

"Here's a darling plant for a hanging basket—just the thing now, when yellow is so popular; '— from Mexico — of creeping, drooping habit, with yellow, double, daisy-like flowers.' "

"That would be lovely and something different. Do tell us its name."

"Well, here it is, '*Sanvitalia procumbens flore-pleno*.' "

"You don't say!"

"I do, verily. Here's an item for you: 'The forget-me-not — *Myosotis*—if cut and put into water will go on blooming and take root.' . . . Blanche, did you notice this? 'Whitlavia, from California, likes shade; is proof against cold and wet. A whole branch of its blue and white bells will bloom out in water and last several days, if cut when the lower buds are ready to open.' Just the plant, dear, for the north garden we are going to have."

"Yes, I hear. I've really decided what I want for a hanging basket—one each of the ice and the dew plant. I think their cool, icy-looking branches will be refreshing to behold in mid-summer. I noticed they were recommended for baskets."

"You Precious! indeed, you shall have them; we'll send for seed, and—but no matter now, I have a plan in my head."

. . . Here's another item. 'Salvia makes a nice winter house plant if potted in the fall.' . . . 'Portulaca and nolina do not mind heat and drought.' . .

. . . 'The Fuchsia was so called from a German botanist by the name of Fuchs. It is best planted in a shady place.' . .

. . . 'Do not raise the ground for plants that suffer easily from drought.' . . .

'Sunflower, native of Peru—in old times considered sacred to the sun—worn by the virgins of the sun at the festivals of the Incas.' "

Here Effie interrupted, "Do you realize this is not completing our seed list?"

"Mine is nearly made out. Besides

what you've heard me mention, I have the double sweet alyssum, the prickly poppy, *Argemone*, from Peru, for a short hedge, the *Asperula, azurea setosa*, from the Caucasian Mountains, for massing in a border (blue flowers are less common than other colors); the Swan River Daisy, *Brachycome*, from Australia—'an elegant little plant, flowers blue and white with a dark eye.' For a change in summer vines I'm going to have the L-asa, from South America. Its red and yellow flowers are large and showy, and its branches are covered with stinging hairs that have been known to teach a lesson to meddlers. I know where I shall put those vines. . . . And here comes Tot; what do you want now, darling?"

"Mamma says I may have some pitty vines to climb over my playhouse; an' she's writed the names on this paper, tause she's too busy to come."

Isabel took the scrap from the child's hand, and read: "purple hyacinth bean and orange gourd," with the remark added, "These will amuse Tot and her playmates." She then searched for a description of these, but found none of that particular gourd, though there were numbers of very curious ones named. The other vine she found is known as *Dolichos*, and was pleased to learn that it "rejoices in heat and drought," and that "the seed-pods are as pretty as the flowers."

That evening Isabel had a long talk with her father, who happened to be at home "between trips." The result was, that before leaving again he had a private talk with Carl. Said he:

"Do you realize, my son, that you are almost a man in size, large and strong? Now, it strikes me that you will be the better for the use of some of that muscle outside of the violent strain of gymnasium practice. There is often something needing to be done about a place like this. You have all its benefits as a home and enjoy every rational privilege. Let me tell you something. It is just as much your place to keep up this home as it is mine. After children reach your age they owe something to their parents. The obligation is no longer all on one side."

Now, on Saturday next, I want you carefully to cut into blocks and lift the

sod between the lines I have stretched on the north side of the house. Lay the sods in piles, grass side down, and when I get home again we'll go on with the rest—soil must be renewed, leaf-mold filled in, and so on—so that flowering plants can thrive.

"When all is done, you'll be proud to know how much you have contributed to your invalid sister's happiness. We all feel that she's like an angel in the house, and that we cannot do too much for her. Of late, I fancy, she seems more frail each time I return, and it alarms me."

The only response Carl made to all this was, "I don't see how flowers out there can do her any good, anyway."

"Perhaps you'll live to see things differently," replied his father, and then bade

his son good-bye. Ah, how many times in after life did Carl recall his ungracious, unresponsive manner at that parting?

The next few days passed by as usual. The invalid suffered and endured. Carl still made every one nervous with his rudeness upon the slightest provocation. The least service was rendered grudgingly, until even his doting mother thought of his future with dismay.

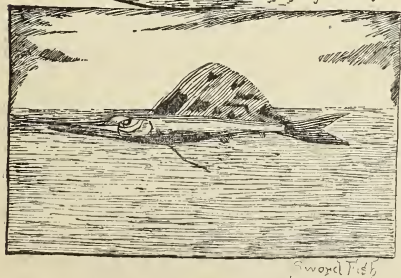
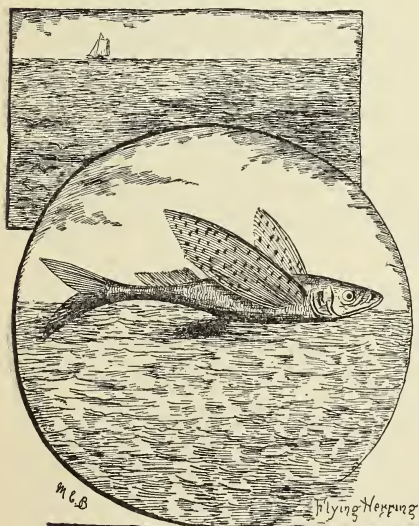
When Friday night came, Isabel was startled at midnight to see a pallid woman, bearing a dim light, approach her bed. Springing up, she exclaimed, "What is it, mamma?"

"Hush," was the answer; "Blanche must not hear. Carl has run away. His bed is untouched and his clothing gone."

MARIA BARRETT BUTLER.

TWO CURIOUS FISH.

A strange creature is the flying fish, of which there are two species one, the dactylopterus, called the flying gurnard, the other the exocoetus or flying herring.



These flying fish are found only in the tropical and sub-tropical seas. The flying herring is plentiful, but the gurnard is scarcer. The fish are seen oftener during rough than calm weather, and if pursued by enemies, or frightened by vessels, will dart from the water. The wings are without motion, except a slight vibration as the wind passes over them, and they do not move them as a bird or bat, to guide their course, but their flight is straight forward, and any deviation from this course is caused by the current of air passing over them. Their flight is generally rapid, and longer when flying against than with the wind, and they usually keep close to the water, although during windy weather they have been known to be carried high enough to fall on the decks of vessels.

Another queer fish is the sword fish. It also is found in the tropical and sub-tropical zones of both the eastern and western hemispheres. Some of the tropical species are of enormous size, and measure from twelve to fifteen feet in length, with swords at least three feet long. This sword is much the shape of a cone somewhat flattened, the end sharply pointed. It is smooth on the top and

sides, but the under part is rough. It is really an elongation of the bones of the upper jaw, and is possessed of very great strength, for with these weapons they have

been known to pierce the copper sheathing of vessels and heavy plates and timbers, but although they can drive the sword far into these substances they can not draw them out, so break them off and swim away without them. A large fin extends nearly the length of the back of the creature, which is folded back when the fish is swimming, in order that its progress may not be impeded if speed is desired, but when quietly swimming it is often erected and acts as a sail to carry

it through the water. The sword fish is very aggressive in its disposition, and will often assail fish much larger than itself. Even the whale is not exempt from its attacks. The food of the sword fish consists of smaller fish which it kills by stabbing them with its sword. There is quite a large business done in sword fishing, as the flesh is used for food. The larger species are caught by harpooning, the smaller in nets.

M. E. B.

EDITOR'S MISCELLANY.

PUBLICATIONS RECEIVED.

Moths and Butterflies, by Julia P. Ballard, \$1.50.

The Trees of Northeastern America, by Charles S. Newhall, \$2.50. Both of the above, of which more extended notices are given elsewhere, are published by G. P. Putnam's Sons, New York.

Annual Report of the Maine State College Agricultural Experiment Station for 1889. A handsome volume of more than 300 pages. Among other matters, we specially note the Apple Maggot, which is a very complete monograph on *Trypeta pomonella*, and will prove of great value to orchardists in combatting this destructive insect.

Insect Life.—The January number of "Insect Life" is devoted entirely to the report of the Annual Meeting of the Association of Economic Entomologists, held at Champaign, Illinois, last November. Every page is full of practical information for farmers, gardeners and fruit growers. The address of the President, Dr. C. V. Riley, reviews the work and observations of the past year, and especially refers to the results of the operations of the National Department at Washington, notices the occurrence of the hop-fly in Oregon and Washington, the work of subduing the phylloxera in France and other European countries, the introduction of insect parasites, the use of bisulphide of carbon against grain weevils, insecticide machinery, apiculture, silk culture, and numerous other topics. A dozen other papers on practical subjects, by other writers make the number a most excellent one. Division of Entomology, United States Department of Agriculture.

Experiment Station Record, Vol. 2, No. 5, December, 1890. A valuable digest of many of the State Experiment Station Reports made in 1890. Published by authority of the Secretary of Agriculture.

Some Fungous Diseases of the Sweet Potato.—Such is the title of Bulletin No. 76, of the New Jersey Agricultural College Experiment Station. Seven species of mold are noticed which affect the tubers, and two the leaves. This Bulletin is the record of a great amount of careful work and study, and is quite fully illustrated. A valuable work for sweet potato growers.

Hatch Experiment Station, Bulletin No. 11, Amherst, Mass.

Vermont State Experiment Station, Bulletins Nos. 21 and 22, Burlington, Vt.

Kentucky Experiment Station, Bulletin No. 31. Some Strawberry Pests. Lexington, Ky.

University of Tennessee Agricultural Experiment Station, Bulletin January, 1891. Articles on Black Knot of the Plum and Cherry, Pruning Fruit Trees,

the Glassy-winged Soldier Bug, and experiments in growing potatoes have special interest for gardeners and fruitgrowers.

New York Agricultural Ex. Station, Bulletin No. 25.

Oregon Agricultural Ex. Station, Bulletin No. 7.

University of Minnesota, Bulletin No. 13, A Treatise on Flax Culture. No. 14, besides other matter, has an extended article on Sugar Beets, their cultivation, process of manufacture, etc.

DIANE.

A chronicle of the reign of Charles IX, by Prosper Mérimée, translated by George Saintsbury. Chicago; Charles H. Sergel & Co. This is a historical romance somewhat after the manner of some of Sir Walter Scott's, and vividly traces the French court and political affairs in the latter part of the 16th century, and especially with reference to the influence and acts of Catharine de Medici, that monstrosity in the form of a woman. The work gives the reader a clear account of one of the most remarkable periods of French history, and is written in a most entertaining style.

STOLEN AMERICA.

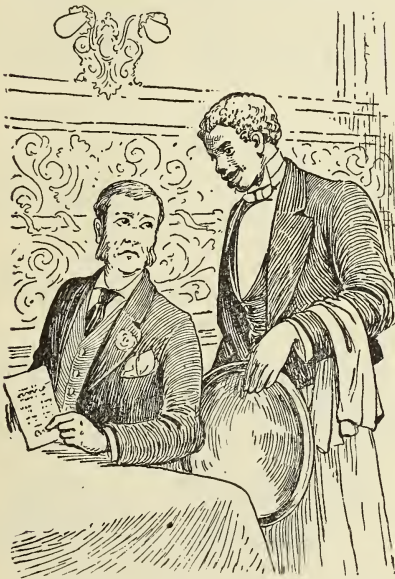
A Story of Bermuda. By Isobel Henderson Floyd. Cassell Publishing Co., New York. This is a romance of much merit in itself, and as such will find many interested readers; but its special mission is as a vehicle to convey to our countrymen a knowledge of the war power which is held in reserve in the island of Bermuda for any possible contingency that may arise for its use against us as a nation by Great Britain. The writer, a daughter of the late Peter Henderson, is devotedly patriotic, and the crowning wish of her life is that our countrymen may know the weakness of our Atlantic seaport towns and cities, and provide ample means for their defence, if, unfortunately, there should ever be cause to employ them. Forewarned is forearmed. So may it be.

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And how is he now?" "Te-he! Plenty appertite now, sah." "That so? What did he do?" "Did n't do nuff'n', sah. He on'y went an' took

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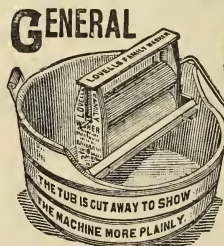
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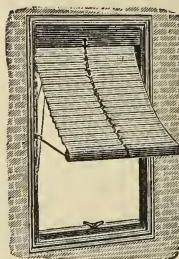
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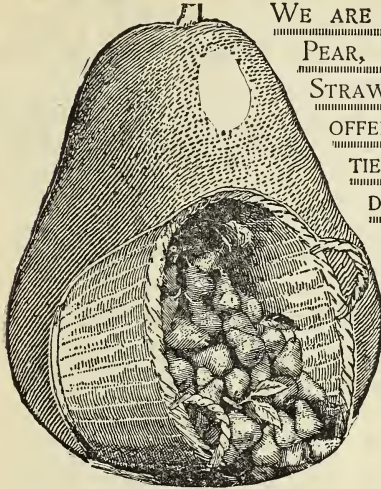
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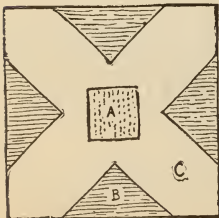
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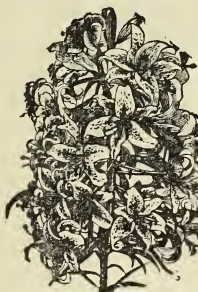
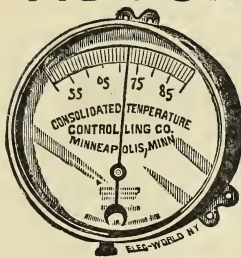
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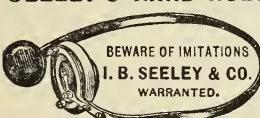
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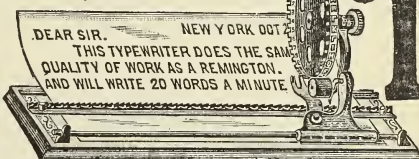
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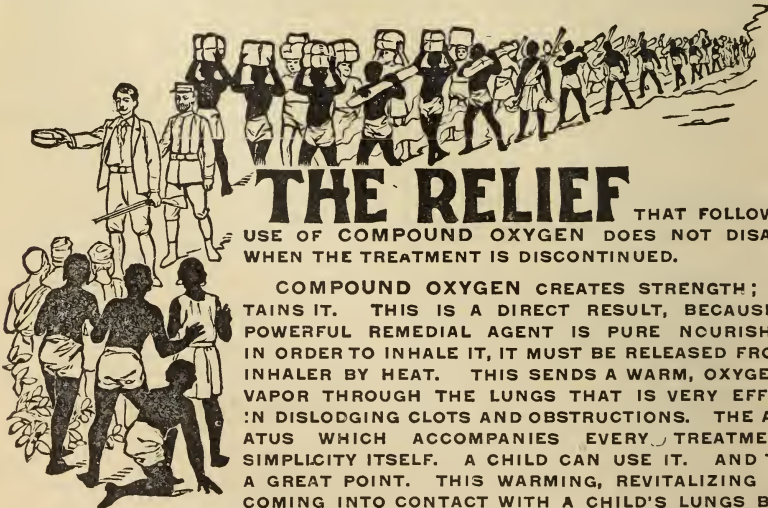
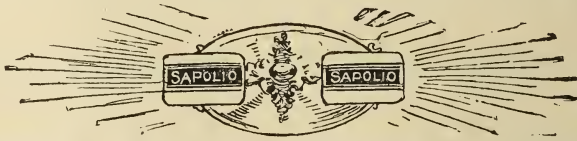
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Vol. 14.

No. 4

Vicks
Illustrated
Monthly
MAGAZINE.

APRIL 1891.

Published by JAMES VICK, SEEDSMAN, Rochester, N. Y.

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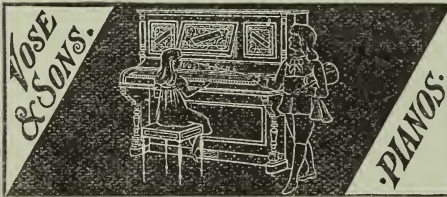
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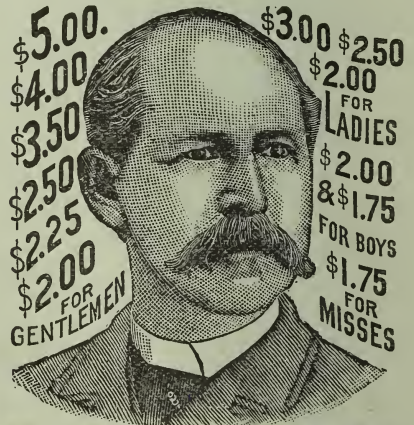
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Other indications are hawking, spitting, weak and inflamed eyes, frequent soreness of the throat, often ringing or roaring or other noises in the ears, more or less impairment of the hearing, loss of smell, memory impaired, dullness and dizziness of the head, and dryness and heat of the nose.

All persons thus affected take cold easily. The breath sometimes reveals to all around the corruption within, while the patient often loses all sense of smell. The disease advances covertly, until pain in the chest, lungs or bowels startles him; he hacks and coughs, has dyspepsia, liver complaint, and is urged by his doctor to take this or that; perhaps cod-liver oil is prescribed. Perfectly ridiculous! The foul ulcers in the head can not be reached by pouring such stuff into the poor, jaded stomach. The patient becomes nervous; the voice harsh and unnatural; he feels disheartened; memory loses its power; judgment her zeal; gloomy forebodings hang overhead; hundreds, yes, thousands, in such circumstances feel that to die would be a relief, and many even do cut the thread of life to end their sorrows.

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Eighteen Years of terrible headache, disgusting nasal discharges, dryness of the throat, acute bronchitis, coughing, soreness of the lungs, raising bloody mucus, and even night sweats, incapacitating me from my professional duties and bringing me to the verge of the grave—all were caused by, and the results of, nasal catarrh. After spending hundreds of dollars and obtaining no relief, I compounded my Catarrh Specific and Cold Air Inhaling Balm, and wrought upon myself a wonderful cure. Now I can speak for hours with no difficulty, and can breathe freely in any atmosphere. At the calls of numerous friends, I have given my cure to the public, and have now thousands of patients in all parts of the country, and thousands of happy fellow-beings whose sufferings I have relieved. My cure is certain, thorough and perfect, and is indorsed by every physician who has examined it. If I can relieve my fellow-beings as I have been relieved of this loathsome disease, which makes the possessor at once disgusting to himself and others, I shall be satisfied and feel that I have done my little toward removing the ills of mankind.

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Mention Vick's Magazine.

Rev. P. T. CHILDS, Troy, Ohio.

✕ Michigan • for • 1891 ✕

Hillsdale, Sept. 28--Oct. 2.

After a large amount of correspondence with several State Agricultural Societies, Expositions, &c., and taking into consideration the many votes and letters from our customers, requesting that the competition be held in Indiana, Ohio, Michigan, or one of the more central States, we have decided to hold our annual \$1000.00 Prize Vegetable Exhibition, for 1891, at Hillsdale, Mich., Sept. 28th—Oct 2d. Our reason being that Hillsdale is very central,—located almost at the junction of Michigan, Ohio and Indiana, and not far from Illinois, Wisconsin and Pennsylvania.

The Hillsdale Association has agreed to provide a very large tent, about 100 x 100 feet, and in every way prepare for the reception of this mammoth exhibition on a scale worthy of such a grand enterprise.

Arrangements have been made so that exhibitors on the line of United States, American, or Wells, Fargo & Co. Express Companies can ship their goods without transferring,—that is, the goods will go direct to Hillsdale, Mich., on the payment of only one express rate.

It costs but very little to enter for these prizes, for instance :

One pkt Cabbage, All Seasons,	10 cts	One pkt Tomato, McCullum's Hybrid,	10 cts
One pkt Celery, Golden Self-blanching,	10 cts	One pkt Musk Melon, Irondequoit,	15 cts
Potato, Vick's Perfection, 1 lb. 40 cts.; 3 lbs. \$1 ;		One pkt Onion, Danvers Yellow Globe,	5 cts
peck, 50 cts.; bushel, \$1.60; bbl.,	\$4.00	One pkt Mangel Wurzel, (Beet), Golden Giant, . . .	10 cts
One pkt Cauliflower, Vick's Ideal,	50 cts		

Select one or more that you would like to grow and enter for a prize. Be sure and state, in your order, that you intend entering for competition. The prizes are large and liberal, viz :

	1st Prize	2d Prize	3d Prize	4th Prize
Cabbage, for largest and best three heads All Seasons	\$65.00	\$30.00	\$20.00	\$10.00
Celery, Golden Self-blanching, twelve plants, largest and best blanchd,	65.00	30.00	20.00	10.00
Potatoes, best peck, Vick's Perfection,	65.00	30.00	20.00	10.00
Cauliflower, largest and best three heads, Vick's Ideal,	65.00	30.00	20.00	10.00
Tomatoes, largest and best twelve McCollum's Hybrid,	65.00	30.00	20.00	10.00
Musk Melon, largest and best three Irondequoit Melons,	65.00	30.00	20.00	10.00
Onion, largest and best twelve Danvers Yellow Globe,	65.00	30.00	20.00	10.00
Mangel, largest one Golden Giant,	65.00	30.00	20.00	10.00

We hope our friends will join us in making this a larger and better Fair than the one at Peoria last year.

For full particulars see *Vick's Floral Guide*, 1891.

JAMES VICK, SEEDSMAN, Rochester, N. Y.

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JAMES VICK, SEEDSMAN, Rochester, N. Y.

Grand Rapids Forcing Lettuce.



This new and splendid Early Forcing Lettuce originated in Grand Rapids, Mich., some six years ago. So highly is it prized by the gardeners it has been impossible to procure seed until this year. This Lettuce is shipped to Cleveland and Cincinnati in large quantities, selling for from 10 to 20 cents per pound. We have secured all the surplus seed grown there (a small amount) at a high figure, and can only sell in small quantities.

One gardener wrote that he was unable to fill his orders last spring at twenty cents per pound in lots. It is not an uncommon thing to see a house full of Lettuce that will average $\frac{1}{2}$ a pound to a plant, occasional heads weigh $1\frac{1}{4}$ and $1\frac{1}{2}$ pounds. Some gardeners have raised at the rate of 20 to 30 pounds to a common sash and taken three crops off the same ground. It is the best shipping Lettuce known. Large and tender, consumers willingly pay a large advance on price of common sorts. Grows much larger in greenhouse than in frames. Should there be trouble

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Plant six inches apart. Care should be taken to have the plants as near one size as possible, as the larger ones seem to smother the smaller. Grand Rapids gardeners, who are the most successful, use one-half good rotted manure. It is almost impossible to get the ground too rich.

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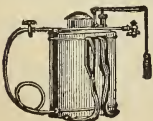
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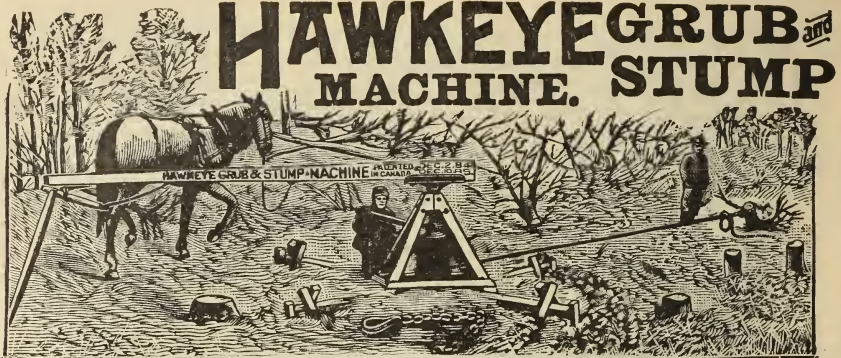
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APRIL, 1891.

IN THE February number of the *American Garden*, in a somewhat extended article, are set forth some of the features of the Seed Division of the Department of Agriculture, and an account of the seed distribution. It is by WILLIAM M. KING, ex-Chief of the Seed Division.

The article contains nothing that is not pretty well known by intelligent readers, especially by those interested in agricultural and horticultural matters.

The question that naturally presented itself on reading the account is, why this was written and prominently presented as the leading article in the journal mentioned. To answer this inquiry

it is necessary to examine the account in detail.

The first postulates of the writer are that "the foundation of the world's prosperity is an abundant crop. A prime basis for a good crop is good seed." We are then told that: "The primary object of the distribution of seeds by the Department of Agriculture to those engaged in agricultural pursuits, is to give increased value to production by the introduction

and distribution of improved varieties that will increase the annual average yield of the staple crops of grain and vegetables, and more rapidly and more generally introduce the very best varieties of seeds into new States and Territories, as well as into the older ones, where the average annual crop is being diminished by seeding with unselected and inferior seeds." After a sufficient enlargement on this topic by the writer, the conclusion is reached that the end sought to be gained by the government

in this matter of seed distribution has been reached. "The results attained justify the statement that in no department of the general government has the expenditure (*sic*?) of so small an amount been productive of as much good as that expended in the introduction and dissemination of valuable seeds and plants." A brief of the history of the seed and plant distribution is given, as, also, a tabular statement of the kinds and quantities of seeds sent out from the Department under the general appropriation act of Congress, from July 1, 1888, to June 30, 1889. A considerable space is then devoted to extracts from the reports of different commissioners, all of them to the effect that the distribution has been of great value to the country. The statements of agricultural writers and Experiment Station Directors, and extracts from letters of persons who had received seeds from the Division are brought out to show that the seeds have been of some value. Finally, we reach the concluding paragraph, which apparently was intended to appear as a logical conclusion in the general line of argument running through the article. It is this: "We are distinctively and pre-eminently a nation of farmers, inasmuch as not less than 44 per cent. of the entire population is engaged in rural pursuits. General WASHINGTON, and the Presidents who immediately succeeded him in the early history of the country, urged upon both houses of Congress the importance of placing agriculture as well as commerce immediately under the fostering care of the government. Will not the people's representatives recognize the fact that our welfare as a nation depends largely upon the better development of American agriculture? In the solution of the agricultural problems which are of so much importance in a country extending through so wide a range of latitude, a climate so diversified, and with agricultural interests the greatest in the world, the Department of Agriculture must ever be an important factor."

Now, to state the line of argument briefly, it is this: Good seeds are a necessity. The agriculturists of many parts of the country will fail to procure the best and most appropriate seeds without the aid of the government. The government

has given this aid and has supplied good seeds. Therefore the Department of Agriculture is an important factor.

The fallacy of the argument is apparent. No one has ever denied the valuable services of the Department of Agriculture; but its value is not estimated by the Seed Division. It is the Seed Division, not the Department of Agriculture, that has been weighed in the balance of popular judgment and found wanting. Shall we charitably say that the writer lost his way and wandered, but reached a good end by a wrong way? We might do so if the whole tenor of the article did not display the design to glorify the Seed Division. Was there a thought that assent would be given to this position by assent to the concluding paragraph which all will yield? Was there the thought that the mass of readers would accept it as good logic, and therefore that the Seed Division, as now administered, is a valuable aid to agriculture? It is an inquiry somewhat interesting. For many years the appropriations for the distribution of seeds by the Seed Division have been growing larger, and the kinds and the character of the seeds sent out have made it evident to all that the original good purposes for which the Division was established had been lost sight of, and had become debased to the bad service of politics. The primary object of distributing seeds by the government was to procure those which were considered of unusual merit in foreign countries, through our consuls and other agents, and to send them to parties in this country who would give them a trial and ascertain their value. To the extent that the government has acted in conformity with this primary intention may the usefulness of the seed distribution be measured, and beyond this, in the opinion of those who have watched the operations of the Seed Division and are well qualified to judge, the money expended, or by far the greater share of it has been lost; and the evils connected with the distribution have been so gross that, in the apparent impossibility of correcting them, a strong demand has been made to abolish the Division entirely.

It would seem that the services of the government might be specially useful in the dissemination of seeds which may be

classified under two heads; first, those of the great crops of the country, such as wheat, corn, oats, barley, rye, grasses, and other forage plants, cotton and tobacco; and secondly, those of plants which might become important crops if their culture should prove successful, and among these may be mentioned sorghum, millet, new forage plants, pyrethrum, etc.

Now, if the records of the Seed Division be examined, we shall find that its usefulness has been almost wholly along this line. One reason of this is that the cultivators of most of these crops raise them for the seed, not as seed for seeding purposes primarily, but as food for man and animals, and therefore they can and do supply themselves with the necessary amount of seed for seeding and thereby it happens there is not the change of seed that has been proved to be necessary with all crops to keep them up to the highest standard of excellence; for the same reason these seeds do not so freely enter the general trade as those kinds which seedsmen most largely deal in. The statements that Mr. KING has presented in this article from Commissioners and Directors of Experiment Stations, showing favorable results of the seed distributions, relate almost entirely to the kinds of seeds which arrange themselves in the two classes we have described, and these statements have evidently been selected with care. But even in one of these reports, that of Maj. HENRY E. ALVORD, for 1886, the many disappointments suffered from the distributions is made to appear when the writer says: "The seeds received this season, as a whole, for the first time in my experience with the Department, answer the definition new and useful."

But let us look at the kinds of seeds sent out, the annual appropriation of which now amounts to \$100,000, and according to Mr. KING, the "official, clerical and working force" required to carry on this seed establishment aggregates one hundred persons, and the mails carry 200 tons of seeds. In the statement referred to, Mr. KING shows that under the appropriation act of Congress, from July 1, 1888, to June 30, 1889, the whole number of packages sent out was 4,852,512. Of this number 4,018,031 are vegetable and flower seeds, leaving only 834,481 of all

other kinds, mostly under the head of field seeds. But among these 548,009 packages are turnip seeds! There are left only 150,910 packages which might possibly prove to be really of any value—about one-seventeenth part of the whole. And this agrees wonderfully well with what we have previously said in these pages, that if the government should appropriate \$5,000 for the Seed Division for its legitimate use in the dissemination of new and valuable seeds, it would be ample. As far as relates to vegetable and flower seeds, we say, without fear of contradiction, that the Seed Division has never sent out a new and useful variety. In the nature of the case they cannot do so, since they procure their stock of these seeds from the seedsmen who have already put them on the market. In the very last report of the Secretary of Agriculture, 1889, correspondents who have received vegetable seeds report on the value of Early Mohawk and Early Red Valentine Beans, Danvers Yellow Onion, Champion of England Peas, the Deacon Lettuce, All Seasons Cabbage, and some others, all of which have been sent out by seedsmen, and most of them for many years. The seeds sent out by the Department are mostly given to Members of Congress. According to the tabular statement, Senators, Representatives and Delegates in Congress were given 3,732,112 packages, leaving only a little over a million to be sent to individuals, Experiment Stations and agricultural societies. And this explains why the Seed Division has grown as it has, and Congress is willing to make appropriations for it. Politicians own it and use it for their own purposes, while the original purpose for which it was established has vanished from sight. The Agricultural Department, on the whole, we regard as admirable, and it is doing excellent work for the country; but the Seed Division has been degraded to low political uses at the expense of the people, and the better informed portion of the community demand its improvement or abolishment.

One-tenth part of the money now appropriated for the Seed Division would be entirely sufficient for all good uses. The rest of it is worse than wasted, and the officers of the Agricultural Department know it, and the people know it!

SUMMER ANNUALS.

Flowers are so cheap and so beautiful it really seems strange that all do not have them. Some kinds do not require much care, and give an abundance of bloom through the entire summer and fall.

When the novice first begins to grow flowers a mistake is frequently made. Often one's eye is attracted by some wonderful novelty, some beautiful flower or plant that all are praising. The plant is sent for, or the seed secured and sown. What is the result? Frequently a great disappointment, caused by a total failure to secure the desired growth and bloom. Is the florist to blame for this? In nine cases out of ten I think not. The cultivator is to blame for experimenting on costly novelties before learning the A, B, C of flower lore.

any flowers appear that are undesirable in color pull up the plant and throw it away. Don't be too tender hearted and let it stand till it sows its seed. Phlox self-sows, and if you want you can have a bed of these beautiful flowers year after year in the same place. The self-sown seed comes up earlier and therefore gives earlier bloom than that sown in the spring. I sometimes think it is a good plan to sow the seed in the fall in order to secure early flowers.

The colors shown in phlox are some of Flora's loveliest. Oh, the rich velvety reds, shading from almost black down through the maroons and scarlets to rose color and sea-shell pink. And then the spottings and streakings, and white eyes and pink eyes, and red eyes, till it seems as if nature had exhausted her art in try-



PHLOX DRUMMONDII.

Phlox Drummondii is one of the best annuals. A dime's worth of phlox seed will give an abundance of bloom from June, or thereabouts, till frost comes. Phlox does not need special care; a good seed bed and good seed sown are the two principal factors for the successful growing of phlox. If the plants come too thick pull out and transplant, or give away the surplus stock. Keep the weeds down until the phlox is well established anyway. Then if a reasonable amount of rain falls little further care will be needed. If a drouth occurs a moderate amount of water will keep the plants in bloom. If

ing not to make any two clusters of flowers alike. The white? No, we have not forgotten that, and every bed of phlox needs white as a foil for the more brilliant hues.

If one wants to grow some special variety get the seed of that kind unmixed. If a variety of colors is desired a packet of mixed seeds will be best. Sow them in a bed by themselves, as phlox is prettier massed than grown in rows or isolated bunches.

Don't be afraid to pick your flowers; pick them freely and give away all you can. The more flowers you pick the more plentiful will be the bloom.

Another excellent annual is the verbenas. This is not quite so common or quite so easily cultivated as phlox. One does stand a chance of consummate failure if not understanding a few of its common needs. At least my first attempt at

the weeds down and the soil loose till the plants were of good size. In a short time they covered the whole surface of the bed. Soon blooming began, a mass of rich flowers covered the plants till all were blackened by the frost. The

flower clusters were large, full and fragrant, and of lovely colors. Beds of phlox and verbenas constitute a flower garden in themselves, and give a constant pleasure for months. Verbenas may be slipped and potted for winter blooming. They make really elegant window plants.

Petunias are old and well known. I wonder sometimes if many know how really valuable they are. They grow almost as easily as weeds, and like phlox and verbenas, furnish a glorious succession of flowers.

Single petunias are not as fine for cutting as are the double, but they make a fine show in a bed and are very sweet.

One good thing about petunias is that which has been noticed in relation to Phlox Drummondii, they will come up in the spring from the seeds dropped from the plants the previous autumn, and these plants will be both early and hardy, ready to transplant into beds at the earliest opportunity. For beds and large masses, where the great requirement is an

abundance of bloom, what are known as the small-flowered varieties are the most desirable, and these will continue to make growth and set new flowers without intermission the whole season, and until destroyed by autumn frosts. But there is really quite a field to operate in among petunias, and one need not confine attention entirely to beds or masses. The large-flowered varieties are very beautiful, and of such variety as to be practically endless. Plants of these kinds will



VERBENAS.

raising verbenas was anything but a success. Since then I have had fine ones that seemed to grow *so easily*. Verbena seeds do not always germinate quickly, and it is a good plan to soak them a little before sowing. When the plants are once up and where you want them there is little more trouble. The finest verbenas I ever had a hand in raising were sown in a bed in the common garden. The soil was very rich and the bed not shaded except perhaps a little by a fence. I kept

produce the finest flowers if cultivated singly in rows, setting the plants about eighteen inches apart, and the rows at least two feet apart.

In selecting seeds for a summer garden it is best to choose those that will give the best satisfaction for the time and money spent. Many flowers that are beautiful to look upon only bloom for a short period. If one can have a large variety and manage to have a succession of bloom these plants are good to have. But for the best results for time and money give me the three annuals mentioned above.

To get the best results give good cultivation — a well manured and well prepared soil, and stir the ground frequently about the young plants while growing, this will increase the size and number of flowers.

ROSE SEELYE MILLER.



PETUNIAS.

A BEGINNER IN FRUIT-GROWING.

NUMBER II.

A farmer on one hundred and forty acres of land asks me what fruits he can raise and not have them interfere seriously with farm work. He has two small boys whom he wishes to interest and keep contentedly on the farm if possible, and he further asks whether he couldn't make fruit growing pay as a sort of annex to his farming. As to the latter part of the inquiry I would answer decidedly no, if the farming is done as it might and should be. I know a number of farmers with farms of half that size who are wholly occupied in managing and working them in regular farm crops. I have a neighbor with less than 100 acres who paid 25 cents each for grubbing up a ten acre orchard of apple and pear trees just coming into bearing, that he might devote the ground to a rotation of crops. The neighbors all considered him crazy but the outcome has proved that the land has been more

profitable in farm crops than in orchard. The last season six acres of this land produced 800 bushels of potatoes, worth \$1.18 per bushel. This man is an enthusiast in farming and not in fruit growing, and more successful in some of his farming than the majority. When he was grubbing his orchard it seemed to me that it would have been wiser to have grubbed two rows and left two rows alternately, and this would have left long strips capable of unimpeded cultivation while it gave an extra chance to the remaining trees. There are many orchards where such a course would give new life to the trees left and possibly result in no diminution of the crop.

In Ottawa county, in northern Ohio, and the adjacent islands, many grape growers have changed to peach and plum growing, and in doing so they first grubbed every alternate row and planted the

trees, leaving the remaining rows to bear a few years longer. In many cases just as many grapes were gathered from these rows as from the whole, the manuring for the orchard and the more thorough cultivation, coupled with increased sunlight and air, producing this result.

As a rule in the more favored fruit regions most farms have more fruit trees and bushes on them than are taken good care of, and it would be foolish to put out more under these circumstances. I once knew a man who bought a farm that had been rented for several years. Not far from the house was a pear tree nearly forty years old that seemed in the last stages of existence. Around it was a thicket of pear suckers and a lot of wild plum brush, over which clambered a luxuriant growth of bitter-sweet. He cleared away the undergrowth, trimmed out all the dead limbs, and made a garden alongside the tree. The tree at once put out new growth and for fifteen years gave an abundance of fruit, finally breaking off in a high wind, the trunk being pretty rotten at the time its rejuvenation was begun.

While this tree was bearing its unexpected crops the owner planted other trees, which came into bearing and thus lost no time. It takes years from the time of planting to get trees into a bearing state, and the notion of planting them with an idea of interesting boys already partly grown up will fail, because of lack of time. If there is already a fair amount of standard fruit, say an acre or two, around the house, it is best to give this the best possible care, only adding to it, if the location is favorable, a few peaches, cherries and plums, which, under favorable circumstances, should bear a couple of crops inside of nine years. As a general thing there are too few grapes on most farms. They are of the easiest cultivation, the vines can be bought cheap and the pruning can be done at a time when there is not much to do on the farm. I believe I have, in former articles, given some of the reasons why commercial berry growing does not work in nicely with farming. The main trouble is in gathering and marketing, and the man who lets his surplus early peas, his early pears and Astrachan apples waste, because he cannot find time to go to market, need not plant berries with a view to

profitable marketing of the surplus, unless he either keeps more help or materially changes his methods and crops. Mr. Terry solved the problem of picking and marketing nearly \$300 worth of strawberries by employing three young men extra, but his market was only two miles from home, and an extra good one at that, so he could deliver his berries in the evening or any other time of day. He admits, however, that it was a pretty busy time, haying and berrying altogether, and does not advise farmers with much clover hay to engage in any extended strawberry growing. My own practice is to grow the mammoth clover which does not mature until July, when the strawberries are gone, and we can arrange so as to pick raspberries only twice a week.

In conclusion it may be said that, properly managed, either farming or fruit growing will fully occupy the energies and brain of any cultivator of the soil, and it is better to push business in the way of increased yield and reduced expense than to add another pursuit requiring a different outfit of tools and a different line of experience. There are some fruits that succeed tolerably well in drained, rich ground without much cultivation, especially if they are where fowls run, and of these no farmer ought to fail to have enough to supply his family. These, in the order of ease of growth and minimum of care, are cherries, grapes, blackberries, pears, summer and fall apples, quinces and currants.

I cannot close this article without a word to fruit growers, and that is in relation to the value of early work in the spring before the warmth of May starts roots of all kinds into growth. The trimming of all kinds of bushes and trees, the collecting and burning of brush, can be done before frost is out of the ground. As soon as the ground is dry enough the cultivators should be started in the raspberries and blackberries, and asparagus, and the plow in ground to be planted. Strawberries and raspberries will do far better in ground plowed early than in that plowed just before planting and hastily and imperfectly fitted. Weeding is not generally considered winter work, but I have done some of it this winter. I have two very fine plats of strawberries separated by one hundred feet of railroad.

One received one more hoeing in August than the other and this is entirely free from all kinds of weeds, but the other patch, for some reason, grew a crop of sorrel in the fall. After freezing weather commenced in the fall I found that on soft, thawing afternoons this sorrel would easily pull out root and branch, the stolons, with their little tufts of tops, sometimes coming out a foot long. It takes about half an hour to weed a row of ten

rods and throw the plants into an old tin pail. It does not disturb the strawberry plants, and as there are more than one hundred sorrel plants to each rod of matted row, it cannot but have an effect on the crop next summer. Of course this weeding could not be done if the beds had been mulched, but that was impracticable owing to the danger of the mulching material taking fire from sparks thrown by railway engines. L. B. PIERCE.

WINTER ASPECT OF TREES.

The Beech, *Fagus ferruginea*, Ait., is well known among our common trees, and deservedly admired for its stately proportions; when standing alone, where it can have ample room to spread its branches, it puts on a far different appearance from that which it has in the beech woods. There, owing to the dense surroundings, the

beech grows tall and straight, with a clean bark, and very slightly branching till near the top, when it spreads its limbs to the sunlight. In the open field, however, or by the roadside, this tree throws out long branches at right angles from the trunk, commencing about five or six feet from the base, thence upward it branches freely, the limbs inclining gradually to the perpendicular as they approach the apex. The wood of the beech is fine grained, hard and tough, and is therefore used in the manufacture of various tools and implements. When dry it makes excellent fuel.

The small, three-cornered beech nut is associated in my mind with the hickory nut and chestnut, and speaks of the by-gone days when, as a child, I tramped the wood and fields together with my playmates, in search of these dainties.

There is a favorite piece of



AMERICAN BEECH.

woods near by, where I spend many leisure hours, visiting the place at all seasons of the year and under various aspects of weather; it is my studio, large enough, to be sure, to furnish a constant supply of nature's marvels. I am not the only one who comes to these peaceful shades, however; a few paces within the main entrance to this sylvan retreat stands a fine, large beech, not at all like those found in the open country, but exceedingly tall and straight, with but few attempts at branching till near the crown. On its smooth, clean bark, from the base up for six feet, are

to be found the mementoes of many visitors; the somewhat hieroglyphic style of carving is sufficiently plain to be read without the aid of an interpreter; truly this grouping of initials and dates is a study in itself. Here I perceive my gay young friend, Mr. TOMPKINS, confident, happy-go-lucky, all sufficient Mr. J. T.; you may know these initials are his by their ample spread and the conspicuous place they occupy. But what of this modest piece of carving off at one side? Ah, that is bashful CHARLIE SIMS and his gentle little wife, Miss BECKY REED, that was; but, dear me, that must have been six or eight years ago, and, sure enough, the capital letters just above are dated back, and are as fresh as C. S. & B. R., I suppose now this old married pair comes to the old haunts once in a while and takes note of

this carved manifesto of their plighted love on the trunk of this monarch of the woods. Here is a request following a couplet of initials, "all we ask is, not to be forgotten," that sounds like the last appeal of two young hearts about to emigrate to the far west.

Again, some of these homely carvings stand as monuments for those who have made their last mark on the course of time, and have passed over to the silent majority. The oldest dates recorded on this venerable tree go back ten years, but it seems to me they are fresh enough to admit of much older dates without being obliterated by the growth of the bark.

THE MAPLE.

Another of our common trees is the sugar maple, *Acer saccharinum*, L., a tree grower, and with a foliage



SUGAR MAPLE.

of lively green. In summer it makes one of our choicest shade trees, and is extensively used for that purpose. Autumn, however, is the time of year when this tree is seen to its best advantage, as the beautiful, tender greens of summer pass into the varied shades of purple, yellow and scarlet. The maple syrup and maple sugar of commerce are made from the sap of this tree, and they have a flavor peculiarly their own, and which gives them rank as delicacies. The maple is used to some extent as framing timber in the construction of barns and such like, more because of its abundance than for its durability, as it lacks in this latter quality compared with some other woods. In cabinet work it is largely employed, for it admits of a high silken polish, and the grain of some varieties is very handsome. It is sold in some parts of the country with beech and other hard woods for kindling purposes.

THE RIVER POPLAR.

A singular tree is the river poplar, *Populus Canadensis*, Desf., singular in its habit of growth and in the color of the bark and foliage, so that you notice it readily in passing along the river road, for it does not grow symmetrically, nor is it at all dense in foliage, but is open and straggling. It does not appear to be a favorite with the birds, and in this respect it reminds me of the willow; in over twelve years'

observation of the nesting habits of our birds I have never seen a nest of any kind in a willow, nor yet in the poplar, while at any time in June we may take a stroll among the apple trees of an orchard, or under the shade trees by the wayside, and find them well tenanted with our cheery little friends, jubilant and happy, filling the air with melody. The poplar, however, if not a social tree, nor yet a shade tree, nor even a picturesque tree, has been utilized, and, owing to the soft texture of its wood, is extensively used in the manufacture of a light soft cardboard, which is afterwards made into small packing boxes and the like.

THE LOCUST.

The locust, *Robinia pseudacacia*, L., is well known in summer by its beautiful foliage and its racemes of white, sweet-scented flowers that adorn its branches, and possi-



NECKLACE COTTONWOOD, OR RIVER COTTONWOOD.

bly, for this reason, has been freely used as a shade tree. In its denuded state, during the winter months, it does not show to advantage, the bark is rough and furrowed, and the branches start out from the trunk at various angles, and apparently at hap-hazard, often twisted and bent, then striking upward or sideways in long straggling curves, so that the tree, as a whole, looks lopsided, or in some measure lacks symmetry; these peculiar features make it easily recognizable in the winter season, and distinguish it from all others used for shade or adornment. The locust is valuable as timber, owing to its durability, and is largely employed in fencing, a good locust post being considered of first rank.

MALFORMATIONS.

Trees sometimes have a deformed and very grotesque appearance from the effects of storms and of lightning. Curious examples, similar to that shown in the engraving, may be seen in any village neighborhood; frequently, too, our trees are sure indicators of

“the way of the wind,” for it is very easy in some situations to detect the drift of the prevailing winds by the aspect of trees in winter. How often you will notice an orchard, in some exposed situation, in which every tree is leaning in one direction, not because they were planted aslant in the first place, but because the wind, blowing mainly from a certain point of the compass, inclines them during their young growth in a line with its sweep. You may see, also, at times, isolated trees standing in upland pastures, with a greater development of branches on the side away from the wind than on that side which habitually gets its full blast. And again, when once in the forest, the Indian will track his way through by the appearance of the tree trunks, that side facing the north producing a mossy or lichen growth on the bark, which is not found on its southern side. For this reason the woodman does not easily get lost, even in cloudy weather, when the sun is obscured.

Sometimes in our winter rambles we meet with a tree whose grand proportions awaken our admiration, and the question as to its height will at once occur to us.

Now, though it may be comparatively easy to calculate the length of a trunk lying on the ground, it is surprisingly difficult to estimate the correct standing height of a tree. The truth is, that objects seem to diminish very rapidly and at an increasing ratio as they rise beyond the ordinary range of vision, and our calculations therefore are likely to come far short of the true figures.

One or two simple devices, however, may be used to settle this point with sufficient accuracy for all ordinary purposes. Supposing then, you wish to ascertain the height of a tree. If the sun shines, you may measure the length of its shadow—with your feet, if you have no exact measure—and perhaps find it sixty feet from base of trunk to the extreme point. Then set up a straight branch or rod in the ground so that it stands upright say four feet; now measure the length of its shadow, which we



COMMON LOCUST.

will suppose is three feet. (Figure 1.) Then by simple proportion the ratio of the rod's shadow to the tree's shadow will be the same as that of the height of the rod to the height of the tree. The proportion is thus: 3:60::4:80. Our tree then is eighty feet high.

But if the sun should not be shining, which is apt to be the case in winter, then set up the rod at some distance from the tree, about as far as seems to be its height, if convenient to do so; now place your head on the ground, with the rod between you and the tree, moving nearer to or farther from it till you can just see the top of the tree over the top of the rod. Place a pebble or mark on the ground where you obtain this view. (Fig. 2.) Now the rod being four feet high, if the distance from the pebble to it is two feet, and the distance from the pebble to the tree is thirty-two feet, we can form the following proportion: 2:32::4:64. Showing the tree to be sixty-four feet high. Exact accuracy, however, by such rough methods cannot be expected.



STORM DEFORMED.

It has become a very general practice, especially among young people, to make collections of curious shells, coins and postage stamps; such collections may be a mere pastime, or they may lead to a more systematic and useful study. For many years it has been my own habit, during summer time, to collect specimens of the different leaves met with in my rambles, and carefully preserve them in a blank book, with date and place of collection and other memoranda, nor am I satisfied till all these specimens have been accurately classified and named. In this way I come to know the trees to which the leaves belong, and soon am interested in their life history.



FIG. 1.

FIG. 2.

This practice leads naturally to pressing and preserving specimens of plants, especially the more rare, interesting and beautiful ones, or those in memory of places visited; it will also lead some to a systematic study of plants. In my own case I have not pressed and preserved plants to any large extent, preferring to make drawings and paintings of them, which I have done for many years. But in whatever way it is pursued it will be found that leaf or plant collecting is not less interesting, even as a pastime, than collecting stamps, and its results are far more beneficial.

J. WALTON.

AN INDISPENSABLE TREE.

A fine old patriarch of a hickory, standing upon a bare, wind-swept hillside, was blown down the other day, and the little nut lovers of the neighborhood were loud in their lamentations. For the hoary old tree, with a trunk five or six feet through, wide spread branches, and height of perhaps one hundred and fifty feet, never failed to rain down every autumn upon the children a perfect deluge of nuts, sound and rich, and sweet. It was amusing, yet pitiful, to see them swarm about their prostrate giant friend and bewail his hard fate. Great pieces of the shaggy bark were carried away and stored in "play houses" as shelves and mementoes by the girls, and the boys came to petition my father for bits of the wood to make handles for their "little hatchets," axes, etc.

Besides their value as nut-bearing trees, —and since nut culture is assuming such importance this is great,—the hickories

are among the most useful and valuable trees in the world. The wood which some of these trees yield has no superior, or, if, indeed, it has any equal, for certain important purposes. It is the hickory wood in the handle which has carried the American axe around the world and has driven, wherever it is known, all other axes out of the market. The same wood has made possible those light carriages which in turn have made possible the American trotting horse, one of the marvels of modern times. No other tree is known the wood of which is tough enough and strong enough to stand the strain imposed upon the American trotting sulky, and without the modern sulky, and its heavier forerunner, neither breeding nor training could have produced that race of horses which every American looks upon with patriotic admiration.

The shell-bark hickory is considered the most valuable species of the genus,

though its nuts are not esteemed so highly as the pecans. The shell-bark is the tree which people usually have in mind when they speak of a hickory tree, and the peculiarity of the bark, which separates into great thick, loose scales, gives to the tree a distinctive appearance by which it is easily recognized.

In 1818 NUTTALL gave to the genus the name *Carya*, by which it is still best known among botanists. But it now transpires that in 1808, and again in 1817, RAFINESQUE proposed for it the Latinized name *Hickoria*, and thus having the older claim, *Hickoria* it stands as recently arranged by Prof. BRITTON. The shag-bark, formerly *Carya alba*, as *Hicoria ovata*, the pig-nut *H. glabra*, and the mocker-nut *H. alba*. There is also a false shag-bark, *H. microcarpa*, which inexperienced woodsmen and botanists sometimes confound with *H. ovata*. But there are many easily distinguishable points of difference. The nuts are smaller and more flattened than those of the true shag-bark, its bark is not so truly shaggy. The big velvety, yellow buds of the true shag, so conspicuous and beautiful in winter, are sharply ovate, while those of the false shag are blunt, and the form of the trees is different. The former is bold and rugged in growth, with broad top and coarse, sparse spray; the latter has narrower, tapering top and abundant strata-like spray. The nuts of both trees are of fine and delicate flavor, with none of the oiliness which soon disgusts one with the black-walnut. The meat of the pear-shaped pig-nuts is acrid and inedible.

In the old primitive ante-bellum days, when every farm was an independent province, hickory trees were still more indispensable than now. The old-time hand-flails were made of straight, sound

hickory poles, with two or three feet of the thicker, heavier end swinging for the "thresher" from half a foot of the stout twisted fiber as a hinge. Our grandmothers' quaint, stiff old chairs were bottomed with hickory splints. The heavy joints of smoked meat were hung from the "smoke house" rafters with hickory "withes," and these same withes largely took the place of rope for miscellaneous tying, harness mending, as whip-lashes, etc. At night, before a warming fire of the refuse hickory branches, the farmer fashioned shoes for his family upon hickory lasts, driving into the shoe soles hickory pegs. The ashes from hickory wood he was always careful to have saved separately and often mixed it with horse and cattle food as a tonic and remedy for disease. In showery weather he would sprinkle the ashes upon the backs of cattle and hogs for the sure extinction of vermin. The housewife also found a use for hickory ashes as being a factor in the making of the best and strongest soap when leached into lye. There were dozens of other uses for the wood, but lastly, I remember the old black aunties would chop up the fibrous inner bark into squares and lay it carefully away to be chipped off and shaped and chewed into "snuff brushes," for which they thought it famous.

The foliage of the shag-bark turns, very early in autumn, a bright orange yellow—a beautiful soft color easily distinguishable at a distance from other trees, and quite convenient for little nut-hunters on large Southern plantations.

The ever increasing demand for the wood of the hickory will in time make it very scarce, and of all trees it is the one which should be planted in every spare nook and corner, or protected wherever of native growth. L. GREENLEE.

NATIVE VINES AND CLIMBERS.

I do not think that we half realize the wild grace and beauty of our native vines until we come unexpectedly upon some fine specimen left to go as it will, and covering tree, summer house or rugged fence with its rich and lovely growth. With a thought of these vines comes a vision of an old homestead whose owner, always caring most for the wild things of

the wood and field, had many a gnarled old tree half hidden by the clinging tendrils of wild grape vines that came up and spread and made a grace where none grew before; of a rustic arbor back of these, where little children played beneath the thick shelter of the trumpet creeper, whose splendid blossoms made royal trumpets

to be blown at will. The great buds with their deep throats hidden until childish fingers opened the way into flaming color and let loose the slender stamens, pollen-tipped and ready. All summer, climbing bittersweet stole through the thick foliage of the oldest of the trees about whose thick trunk it twined an unobtrusive brown withe, growing thicker with the years, but so much the color of the bark itself that it was oftentimes unheeded and more often unnoticed. But when the leaves of the old tree dropped with the frosts of late autumn, the fairy vine remained a thing of beauty, discernable enough now with its brilliant, wax-like berries swinging from every limb, and hanging in rich profusion half the winter.

An old wall or trellis covered with the wild clematis, or common virgin's bower, with its deep green foliage and thick growth is much admired, and July brings the starry clusters of bloom that are a wealth of luxuriance and fragrance over which the bees linger longest; and when the flowers are done, and autumn approaches, comes that aftermath

of beauty, the lovely feathery seed clusters wherever the fairy flowers have been, to recompense us for their loss. Indeed, this late beauty of the vine far outweighs that of its early loveliness of leaf and flower. We take it, yards in length, to gladden our winter rooms with its out-of-door beauty.

Those who are fond of autumn tints value at its worth our native woodbine, and enjoy the rich coloring that Jack Frost gives it as autumn approaches. It is a beautiful covering for rough walls and banks and all rugged places, for it grows hardy and luxuriant. Some of our native vines are, perhaps, the better for judicious training; and being helped by some one who is capable, might grow into an added grace of bearing. But sometimes, especially if the training is not judicious, it is better to let the wild growth alone for turning into a thing of beauty, directed by the hand of the Maker alone. I am sure that the wild bittersweet would be dwarfed and spoiled by any care of training, and being left alone only shows its true grace. It may be so with the others as well.

H. K.

"IN THE FIELDS WITH THE FLOWERS AGAIN."

It was the great naturalist, LINNÆUS, who said, "The true object of botany is not to learn the names of plants, and then to place them in any artificial system, but to detect hidden beauties; and in the eyes of the economist to discover elements of value in root, stem, bark, flower, seeds or leaves. There is not a flower which blows but has some beauty only unveiled to the minute observer and inquirer, some peculiarity of structure fitting it to its place and purpose, and yet not patent to the casual glance."

There is, perhaps, no branch of science which more than botany demands the application of the highest mental powers in the investigation of many of the phenomena presented by plants; to him who truly prosecutes it, whether little or much, it brings in due measure, an immediate reward in his own improvement and delight.

"There is to me

A daintiness about these early flowers,
That touches me like poetry. They bloom

With such a simple loveliness among
The common herbs of pasture, and breathe out
Their lives so unobtrusively, like hearts
Whose breathings are too gentle for this world."
—MILLER.

"There breathes for those who understand
A voice from every flower and tree,
And in the work of Nature's hand
Lies Nature's best philosophy."

As a disciplinary study, when properly pursued, botany stands unrivalled, its special value being in its power to develop and strengthen the perceptive faculties of the mind. It is also one of the most practical studies, for plants produce all animal food, they produce our most valued medicines, our clothing and textile fabrics and paper, all our fuels, our dyes, gums, vegetable acids and oils, and many chemicals, the mild stimulants tea and coffee; plants are used in a thousand ways in the arts; and finally plants clothe the earth, protecting it from violent atmospheric changes, at the same time beautifying, enlivening and cheering the landscape.

There is no study which so richly repays its votaries in real pleasures as does botany. Dr. CHARLES SHORT, botanist and naturalist, of Lexington, Ky., years ago, wrote: "The study of botany has been for many years the occupation of my leisure moments; it is a merited tribute to say, that it has lightened many a heavy, and smoothed many a rugged hour; that beguiled by its charms, I have found no road rough or difficult, no journey tedious, no country desolate or barren. In solitude never solitary, in a desert never without employment; I have found it a relief from the languor of illness, the pressure of business, or from

the unavoidable calamities of life." Let all who can, dwell with the flowers so soon as they delight us with their beauties. Let us study them, and try to understand for what each one exists. In the fields we will gather health and strength and courage to fight bravely life's battles.

"Flower, in the crannied wall,
I pluck you out of the crannies;
Hold you here, root and all, in my hand,
Little flower, but if I could understand
What you are, root and all, and all in all,
I should know what God and man is."

—TENNYSON.

DR. G. G. GROFF.

PREMONITIONS.

The warm south wind blows soft and sweet,
Dissolving swift the snowy sheet.
Beyond the cliffs of Labrador
The northern whirlwinds chafe and roar;
Death's henchman, Winter, calls his train,
And flees beyond the polar main,

Scared by a bluebird on the wing,
Cerulean shaft of Spring.

Along the Southland's farthest rim
Cloud cups are filling to the brim,
While from Life's grottoes underground
Comes clear, but faint, a welcome sound;
The grand old earth around hath spun
To meet the all-rejoicing sun.

Sing, happy voices, joyous sing
Life's greetings to sweet Spring.

On sunny slopes the grass is green,
And springing crocus tips are seen;
The timid violet, in surprise,
Peers at the sun with half-shut eyes;
Listens to catch the hopeful words,
From cheerful, reassuring birds.

Come showers, come flowers, come joyous wing;
Come full-clad, charming Spring!

Already in the farmer's eyes
The teeming golden harvests rise—
Replenished are the empty racks;
And thick the clover-spiced stacks;
Where the black furrows lie forlorn
Embattled stand dark ranks of corn.

The stains which to the plowshare cling
He cleans; quoth he "'tis Spring!"

Along the path where roses blow
And fragrant, banded lilies grow,
The matron walks and counts the hours
Betwixt her and her darling flowers;
Hums a soft tune, and, curious, looks,
Against her sense, in sheltered nooks.

"My heart is longing," hear her sing,
"For my sweet pearls of Spring."

Oft on the border lands of death
Comes, softly blown, a quickening breath;
Through the thick mist oft darts a gleam
Of spring-clad dales beyond the stream,
Where, bathed in floods of light divine,
Flowers incomparable shine.

Thus hints of life eternal cling
To every pulse of Spring. E. B. H.

GREENERY.

Dear comfort-color, thee I sing! The vest
Of quickened earth when from her sleep she wakes,
And all her ground into new verdure breaks,
And all her trees, arousing from their rest,
Bud and put forth the leaf. When, east and west,
The growing flood its silent passage makes,
Laving our liberal zone with seas and lakes

Of green waves, foamed with many a blossom crest.
Green of the woodland, wide; the glowing green
Of sunlit life in every springing clod;
Soft, silver green of grape vine sprays that lean
Along the wind; the mullen's muffled rod;
Carnation's bluish blades; the martial mien
Of serried maize with flags of shifting sheen!

A. S. H.



FOREIGN NOTES.

LONDON'S SOOT AND FOGS.

The amount of carbonaceous and other particles deposited upon glass houses is a good indication of what the London atmosphere contains, and in many places it is only possible to procure a due admission of light to the plants by frequently washing the glass roofs. At one establishment last week two tanks, constructed to collect the rain from a house completed a few years since, were cleared out, and no less than ten barrowloads of sooty matter were removed, all of which must have been conveyed into the tanks from the glass. One scientific gentleman has been engaged in computing the amount of soot deposited from London air, and arrived at the following conclusions: He collected the smoke deposited on a patch of snow in Canonbury one square link, about eight inches in extent, and obtained from it two grains of soot. As London covers one hundred and ten square miles, this would give us for the whole area one thousand tons. As the quantity measured fell in ten days, a month's allowance would need one thousand horses to cart it off, and these stretched in line would extend four miles. Hence London's black fog.

Journal of Horticulture.

CYCLAMEN ROOTS.

Since Mr. WARREN alluded to this subject in his recent lecture before the Royal Horticultural Society, we have referred to various books, from which we learn that in PLINY's time the rootstocks were used to poison arrows, and kill fish; for which latter purpose, says CORNEVIN, in his *Plantes Vénéneuses* (1887), p. 425, they are still used in Italy. The poison is dissipated by heat, so that when cooked the corms might be eaten with impunity. The effects produced are very varied in different cases; thus, while they are very poisonous to human beings and to fish, they are greedily eaten and without harm by pigs. Owing to the change effected by heat, it appears from experiments made at Naples, that fish poisoned with

this substance, and subsequently cooked, may be eaten with impunity. The poisonous principle is called cyclamin, and belongs to the series of substances chemically known as glucosides, and is formed by the association of two substances allied to sugar glucose and mannite.

Gardeners' Chronicle.

RICHARDIA LITTLE GEM.

The new variety of dwarf calla, with this name, which was briefly mentioned in our pages last year, as a promising sort, is thus noticed by a writer in *The Garden*: Plants of this now in bloom show its value, the miniature white spathes coming in very handy for many purposes for which the larger ones of the ordinary sort are unsuitable. As a pot plant it is simply invaluable. It can be bloomed nicely in four-inch pots, and appears to be very free. My plants bloomed when quite small in November, and although they have been a good deal disturbed for the purpose of getting the suckers for propagating, they are now (February) carrying several spathes. I would advise all who have the plant or can get it, to take care of it, and increase it as quickly as possible, as it is sure to become popular.

AMHERSTIA.

The *Journal of Horticulture* publishes an account by Mr. A. W. WIRTS, of a trip to Ceylon and Burmah, and the following description of *Amherstia nobilis* he gives of a specimen seen in Ceylon: Never can I forget my first sight of *Amherstia nobilis*, that marvelous leguminose tree, native of Burmah and Siam, in the governor's ground at Kandy. Imagine a laburnum enlarged into the size of a goodly forest tree, and its tresses of flowers magnified into huge bunches of crimson and amber, four feet long, and each flower five or six inches across, and you will not wonder that when we suddenly came in sight of *Amherstia nobilis* we involuntarily burst into exclamations of wonder and delight.

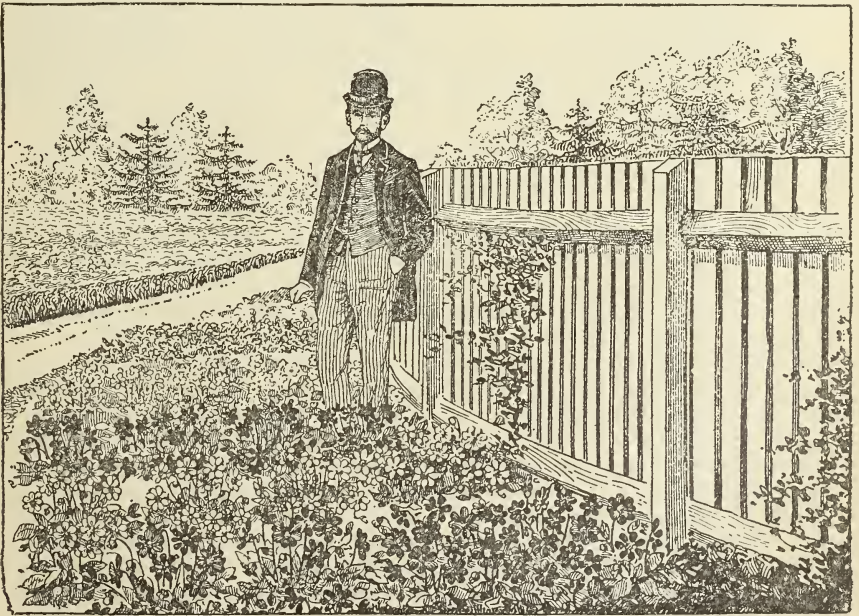


TOM THUMB DAHLIAS.

TOM THUMB DAHLIAS.

A new strain of dahlia originated in England, by Mr. T. W. GIRDLESTONE, has the above name. The plants are of very

compact and bushy, and produce their single flowers freely. Twelve distinct colors have already been "fixed." The advantages of this class of dahlias for



TOM THUMB DAHLIAS AND THEIR RAISER, MR. T. W. GILDERSTONE.

dwarf habit, and their general appearance, as well as comparative height, is shown by these illustrations from the *Journal of Horticulture*. The plants are from nine to twelve inches in height,

many places are apparent at first sight. There is no question but they will be in great demand as soon as their merits are made known. In due time many varieties and styles will probably follow.

PLEASANT GOSSIP.

BEDDING BEGONIAS.

Some remarkable statements have lately appeared in regard to the great value of tuberous begonias as bedding plants; the claim being made that they are equal or even superior to geraniums for this purpose. We cannot but think that such claim is greatly exaggerated, if not groundless. All that is needed is a brief statement of facts. The tuberous begonias, after several years of trial, both in this country and in England, have been found unable to stand full exposure to a bright sun for any great length of time, the sun scalding and burning the foliage, and so checking and stopping the growth of the plant and rendering it generally unhealthy. In partially shaded places, where the plants receive the full sunshine but an hour or two during the day, they succeed fairly well.

BIRD SEED.

Whoever buys bird seed at retail pays a huge profit to the dealer, even when weighed out of seeds in bulk; to use the pound paste-board boxes is still more costly. These are often adulterated with millet, which no bird eats unless forced by hunger; well fed birds waste it so much the package might as well be weighed with sand. I sowed some German rape from one of these mixtures. When it grew it was wild mustard or charlock, *Sinapis arvensis*. But it is good bird seed all the same, and it may be gathered in quantity from the fields in many places. Pull the plants and hang them in bunches till dry, then the seed can be cleaned very easily. Turnips set out in spring will yield bird seed, and mustard seed may be fed to some extent. Canary grass sown in garden drills a foot apart, and kept hoed, will yield a long succession of heads, first from the top of the stem then from the lower points. Cut, not pull, them as they ripen, dry and rub them out, winnow in a large pan. Hemp is easily grown in the garden or any out of the way corner. Some hemp

plants are males, pull them up mostly as soon as you can tell them—their flowers swing by fine threads, the females are in thick, erect spikes. One male plant is enough to keep. Turkeys will break down hemp sometimes, and hens will eat up canary grass if they can get to it.

The "science" employed in mixing seed in the sale boxes is all fudge, different brands are not all alike either in kinds of seed or their proportion. Then, too, scientific seed compounds are no good unless you have a scientific bird who will eat the right number of each, whether he likes them or not. Many think hemp seed must be fed in small doses, but I am not afraid of it in any quantity. Poppy seed is easily grown and is good.

Thus, with a little forethought and a rod of ground, you can raise plenty of fresh seeds, and your bird will cost nothing for his food except a little time and labor.

E. S. GILBERT.

A MISNOMER—CORRECTION.

The colored plate in our February number was erroneously called "A Group of Auriculas," but the word *Polyanthus* should have been used instead of *Auriculas*, a distinguishing term of the same family of plants. The mistake was one of that kind when once made is easily passed unnoticed, as in the present case. *Primula auricula* is considered a distinct species. The status of the polyanthus is probably that of a hybrid. *NICHOLSON'S Dictionary of Gardening* says the polyanthus is a garden race of *primula*, probably derived from a cross between the *primula* and the cowslip—that is, between *Primula vulgaris* and *P. officinalis*. All that was contained in the article, page 65, about the plants and their cultivation was written with reference to the polyanthus plants, and not to the name on the plate, and therefore the correction now made in the name is the only change required.

NICE VIOLETS.

It is too late to tell of the *Fêtes du Carnaval*, but the battle of flowers will be in time to interest all flower lovers. I have seen the first battle, and how the roses fought, and were at last trodden under foot by horses and a ruthless, idle crowd. Marguerites, daisies, pansies, violets, primroses, carnations, coquelicots and every flower of spring made ex-

lets, and decorated by a floral crown. A lady, attired as a Russian peasant, came riding in a Russian conveyance, burdened with choice blossoms, drawn by three horses. I could keep on, but imagine all the strangers, society folks, and all of Nice that could come, there enjoying the battle.

I think in America we may expect, one day in June, "a battle of roses." The



VIOLET DECORATION OF TEA TABLE.

cellent *aides des camps*, but all came out worsted. From a seat in the press tribune I saw plainly every passer-by in carriages, and could hear the remarks of reporters as to inmates of landaus, victorias and phaetons as drawn by Arabian steeds, English thoroughbreds and Kentucky horses, for Americans live in Nice. They all drove rapidly up and down in procession, throwing blossoms at friends and strangers, and receiving a shower of the same in return. There were carriages trimmed with mimosa and yellow satin ribbons, landaus completely covered with fuchsias, violets, roses and geranium leaves, lined inside with beves of pretty girls who were busy throwing flowers and receiving many in return. There was an Indian princess, an English woman who used to sell matches and flowers on the streets of St. Petersburg, who was seated in a landau covered with vio-

weather was propitious, the sun shining brightly, no wind, and spring bonnets came out for the occasion. Americans hurried from Paris to join in the fun, and English people came from Cannes to join in the festivities. Monday there will be a second battle.

Four o'clock teas are the great entertainment of the moment, but the sketch will show you an At Home tea, which is unlike any given in London or America. I received an invitation to take tea with the Duchesse de Pomar, whose love of flowers and beautiful spiritual nature is the talk of London, Paris and Nice. She was robed in violet colored velvet, and a pretty tea cap with precious gems, resembling the bonnet of MARIE STUART, and had such a sweet smile. She chatted of America, its rapid growth, refinement, flower culture and of American artists, whose interests she ever promotes. In

ten minutes I felt myself at home. In an adjoining room was the tea table, where an exquisite tabby was playing in kittenish fashion with an antique pot of violets and begonia leaves, while a cup and saucer of Marie Antionette style, and a silver tea pot sat, stoningly, saying, "pour me out"—a real "*pour boire*" receptacle. I saw no waiter in attendance, but the quiet refinement bespoke the fact that I might pick up the violet, which, as you see, lies at one side of the cup, and help myself to tea. There was a waiter, but hidden behind a curtain, for discovering the absence of sugar and milk, I had not time to ask pussy, what shall I do, before he appeared and gave me all I required, and I was left alone to dream over, in cups of steaming Bohea, the mad bohemianism of the past week of *Carnaval*. He came from his kingdom of folly, where it was nobody questioned, and we had all danced in the moonlight, masqued and faced the populace, following the king; I admit to falling asleep ten minutes, and being aroused by the arrival of another inmate of the tea room, I picked up my violet and sought the other room, where music was sounding from behind velvet curtains smothered in palms, and later was given a recitation by a young American. Pan, by ROBERT BROWNING and a song or two by an English lady. I wish I could tell you of the ball at her home, but I am too American to admire royalty unless endowed by beauty, but it is the moment to send you what is known as a violet decoration of a four o'clock tea table, and to insist upon the suggestion of letting the flowers be the hostess of this impromptu occasion, reserving your force for the battle of flowers.

ADA THORPE-LOFTUS.

A GOOD BEAN AND RADISH.

The *Orange County Farmer* says: We desire to say a good word for the Early Golden Cluster Wax pole bean, which we tried first last season. We found them productive, large pods, and of the very best quality. We shall plant them again. It also says: The quickest growing radish we ever grew was Vick's Early Scarlet Globe. We planted them in the open air last year on April 10th and began pulling them May 13th, 33 days after planting.

HORTICULTURAL MEETING.

At the evening session of the first day of the late meeting of the Western New York Horticultural Society the following address was delivered by Joseph Harris on

FERTILIZERS.

One of the most important facts in regard to fertilizers was briefly and tersely stated by Sir John B. Lawes in a letter I received from him last summer: "Where the food is, there are the roots."

I had written to him asking his opinion in regard to the application of fertilizers. He has had more experience than any other man living, not only as an experimenter but also as a large farmer. I knew all about his experiments, but I wanted to know how he used fertilizers in the ordinary operations on the farm. I knew that he had been using Thomas' slag, or what is known here as phosphate meal, and I asked him whether, if we can get dissolved S. C. rock phosphate at \$20 per ton and phosphate meal at \$15 per ton, which was the better manure. He thought that for dry upland the dissolved phosphate was the cheaper manure, but for black, mucky, grass land the Thomas slag would ultimately prove the cheaper fertilizer. Unfortunately the manufacturer of Thomas' slag in this country has got an exaggerated idea of its value and has raised the price. For the present, therefore, we need not trouble ourselves about it.

There has been a great deal said about the advantages of applying what are called fractional dressings of fertilizers, especially of nitrate of soda, while the crops are growing, and it was principally in regard to this point that I wished to know Sir John Lawes' opinion and practice. He rarely sows a crop on the farm without artificial fertilizers. He grows about 80 acres of barley and he sows on it about 200 pounds each of superphosphate and nitrate of soda per acre, and about the same quantity on oats. For winter wheat he does not use phosphate, but top-dresses it in the spring with about 250 to 300 pounds of nitrate of soda per acre.

"In your country," he wrote me, "I should be disposed to sow nitrate very early in the spring." This is his own practice even in the moister climate of England. In our dry climate it is still more important to get it on the land early in the spring while there is an abundance of moisture in the soil to dissolve it and carry it down to the layer of soil where the roots feed.

In 1870 they had a dry season in England and it is spoken of to this day as the year of the "great drouth." It probably approximated somewhat to the drouths we have here three years out of four.

"At equal prices for nitrogen," Sir John writes, "I certainly prefer nitrate of soda to salts of ammonia. The superiority on pasture grasses is most decided and in dry seasons when the grass upon the ammonia plots is quite burned up there is always plenty of grass where the nitrate is used. We had a great drouth in 1870 and we had no grass anywhere except on the nitrate plots. We found roots four feet deep from the surface, evidently following the nitrate, and, of course, getting water from the subsoil."

"Where the food is, there are the roots."

Soluble phosphoric acid and soluble potash and ammonia salts do not move about in the soil. They remain pretty much where we put them. But nitrates will move about in the water of the soil. During a drouth the soil near the surface is dry, and moist at a lower depth. The nitrates follow the moisture and the roots follow the nitrates. It may be said that the

roots follow the moisture, but this will not explain the fact mentioned by Sir John Lawes that "in dry seasons when the grass upon the ammonia plots is quite burned up there is always plenty of grass where the nitrate is used." In his experiments on grass manures of all kinds are used on different plots and yet he tells us that during the drouth of 1870 "he had no grass anywhere except on the nitrate plot." The moisture of the subsoil, without food, would not draw the roots—or if it did they could not live and thrive without appropriate food.

I feel confident that the intelligent members of the Western New York Horticultural Society will see the significance of these facts and that I need not waste any more of your time. I may perhaps, however, be allowed to remind you that while the farmer has to deal with only half a dozen different crops, the horticulturist, florist, nurseryman and fruit grower has scores and hundreds of different plants to feed. All plants are composed of the same elements, but there is a great difference in the amount of heat, moisture and food best suited to their healthy growth.

Prof. Voorhees of the New Jersey Experiment Station found that two applications of nitrate of soda to tomatoes, one when the plants were set out and one a month later when the fruit was beginning to set, produced a larger crop than the same amount of nitrate applied at once at the time of planting.

On the other hand, Sir John Lawes tells us that it is better to apply the nitrate at once early in the season. Unfortunately Sir John's experiments are confined to farm crops. Tomatoes require plenty of heat and it may be desirable to apply the nitrate while the plants are growing in order to attract the roots into the warm soil near the surface. The same may be true of melons, and not improbably of corn. For out-door roses in permanent beds my experience (I am sorry I cannot say experiment) leads me to think that it is desirable to get the subsoil rich in nitrates. I have used nitrate of soda for several years and the longer I use it on a bed of roses the more vigorous are the plants and the more luxuriant and glossy are the leaves. I give them a heavy dressing every spring and I presume the subsoil is rich in nitrates and that the roots follow the food.

I have had many letters from florists and fruit growers asking about nitrate of soda. The florists ask especially in regard to its effect on roses in the greenhouse. Because nitrate has a wonderful effect on roses out of doors during our bright sunny weather in summer, it does not follow that it will be equally beneficial on roses in the greenhouse. The compost used is probably rich in plant-food. When a plant has all the food it can use applying more will do no good. In such a case the measure of growth is determined by the amount of sunshine, and during the winter months it is not probable that nitrate of soda would have much effect on flowers in the greenhouse. It may well be, however, that a shallower bench and more concentrated food, such as superphosphate and nitrate, might give more roses.

I have had several letters from grape growers. That they can use concentrated fertilizers on their steep side hills I have no sort of doubt. On vineyards where stable manure has been used for some years it is not probable that the soil needs an additional supply of potash. An excess of potash might produce an unnecessary growth of vines and kites. We know that it has this effect on wheat and barley; we get more straw but no more grain. What is wanted is superphosphate and nitrate of soda and possibly, on some soils, lime. The characteristic effect of super-

phosphate is to produce a rapid, early growth, which, in the absence of a sufficient quantity of nitrates, will not continue long enough to mature the grain or ripen the fruit. Farmers say it "burns up" the crop. This is not the case. It produces in two months as much growth as, without it, would be produced in three or four months and then, for lack of other food, the growth stops and the plants are "burnt up." It is not the superphosphate that dries up the plants but the lack of other food. The food needed is nitrogen, and in some cases potash.

But here it must be remembered that if we apply nitrogen in the form of ammonia, dried blood, fish scrap, stable manure, cotton seed cake, bran, dried graius or any other form of organic nitrogen, it must be converted into nitrate before the plants can use it. A grape grower on Canandaigua Lake told me he applied a heavy dressing of dried blood or fish or other animal manure to some of his Isabella grapes and they grew as large as Black Hamburgs, but none of them ripened. The reason for this is obvious. The organic nitrogen was not converted into nitrate till the soil was warm and the season advanced, and this conversion was continued all through the summer and autumn. It was precisely as though he had sown nitrate of soda every day on his vineyard and thus kept the vines growing with excessive vigor without any chance to mature either the wood or the fruit.

What the vines want is a dressing of superphosphate in the fall or early spring plowed or cultivated into the soil so as to get it down to the roots, and as early in the spring as the soil will admit a dressing of 200 or 300 pounds of nitrate of soda. It is not necessary to plow this in. It will get to the roots if applied early enough while there is plenty of moisture in the soil. In the form of nitrate of soda nitrogen is immediately available and will be promptly taken up by the roots and furnish a sap rich in nitrogen and phosphoric acid, and thus force a healthy, vigorous growth early in the season. And in a few weeks there will be no nitrate left in the soil to produce an excessive growth of wood or to retard the ripening of the grapes.

Last autumn a well known member of this society at Geneva wrote me that some of his trees were badly affected with leaf blight from fungus and asked "Do you know of any fertilizer that would help to hold the leaves on the trees?" I answered the question in the *American Agriculturist*—or rather I dodged it. You cannot stump an old editor! Last season was one calculated to take the conceit out of us. I do not think there is anything in the way of underdraining, or tillage, or manuring that would have produced a healthy vigorous growth last year and kept the leaves on our apple orchards. Young, vigorous-growing apple trees were not as badly affected as older trees that have been in bearing for some years. And I cannot but think that anything calculated to increase the growth, vigor and luxuriance of the trees will render them less liable to injury from fungous diseases. If this is the case, then fertilizers will help us.

But we must first learn how to use them. A tree is not like an annual plant of corn that we can manure in the spring and get the crop in the fall. It may take two or three years to get the full results of an application of manure to an apple orchard. A dressing of nitrate of soda applied in January or a little later would not be likely to increase the quantity of sugar in the sap of a maple tree this spring, but would doubtless do so the following year. Neither

could nitrate and superphosphate applied this spring change a leaf bud into a fruit bud on an apple tree the following May or June.

If you want great, thick, fat shoots of asparagus you must get a large, luxuriant growth of the plants the preceding summer and autumn. The roots store up a supply of organic matter in the fall and winter. In the spring they are almost bursting with rich sap and as soon as the weather is warm they throw up strong shoots, and then if you examine the roots you will find them, not round and full of sap, but flattened out and flabby. A supply of immediately available plant food sown early in the spring will increase the size of the shoots, but our main dependence must be on the summer and autumn growth. And the same is true, though in a different way, with fruit trees. I feel, however, that you understand this matter better than I do. I merely want to show that manuring fruit trees is not a simple matter.

All I can say to my friend from Geneva is that if I had his large orchards and his long purse, I would send to New York and get two or three car-loads of nitrate of soda and superphosphate and sow 500 pounds of each per acre early this spring, on the whole of them. That it will pay him well, sooner or later,—and I think sooner—I have no sort of doubt, but if it does not he can stand it!

Nurserymen do not believe in fertilizers, but they have great faith in stable manure. This is not surprising. Ordinary fertilizers are not what they want. They do not contain enough nitrogen. Prof. Snyder of Cornell University has analyzed a two-year-old apple tree. He does not know how hungry we are for information on this subject or he would have given us the weight of the tree and all the details. But assuming that a block of apple trees in the nursery would produce a growth each year of five tons of dry wood and leaves, they remove from the soil, according to this analysis of Prof. Snyder, 12 pounds of phosphoric acid, 44 pounds of potash and 89 pounds of nitrogen. The trees contain over seven times as much nitrogen as they do of phosphoric acid, while the average commercial fertilizers contain seven times as much phosphoric acid as they do of nitrogen. One hundred pounds of such a commercial fertilizer or so-called "complete" manure, would furnish the 12 pounds of phosphoric acid, while it would require between two and three tons to furnish the 89 pounds of nitrogen.

There is an old saying, "Letting land lie in grass impoverishes the father but enriches the son." When you break up an old meadow or pasture the old grass roots and sod decompose and furnish a considerable quantity of nitrates and other plant food. You get double or treble the amount of produce you would have got if you had let it lie in grass. But, of course, this is obtained at the expense of previous accumulations of organic matter in the sod and soil. The son gets the benefits of the father's saving. I believe nurserymen understand this matter and when they rent land they prefer that which has been in grass for some years. Nurserymen cultivate their land very thoroughly between the rows and this constant stirring of the soil facilitates the decomposition of the old sod and other nitrogenous organic matter. But after it has been cultivated for some years the accumulated fertility is gone. You cannot raise as good trees, though ordinary farm crops will often flourish in perfection. The best ten-acre field on my farm is where Samuel Moulson had a nursery of apple trees for five years about thirty years ago. But it needed nitrogen and I have used it freely. Two years ago it

was in oats, manured with superphosphate and nitrate of soda, and the yield was, by weight, a little over 100 bushels per acre, and last year a finer crop of grass I never saw grow.

I will not say that a nurseryman, after he has grown a crop of apple trees on sod land for four or five years can by the use of plenty of nitrates and other plant food continue to grow fine blocks of nursery trees, but I do not know why he cannot. All the indications warrant us in assuming that the mineral elements of plant food, such as phosphoric acid and potash, accumulate in the soil while it is occupied by nursery trees, but there is unquestionably a considerable loss of nitrogen. Lawes and Gilbert's summer fallow experiments clearly show this to be the case. The loss has been so great that it can be detected by analysis as well as by the decreasing crops.

When, therefore, a nurseryman applies an ordinary commercial fertilizer containing less nitrogen than is found in clover hay, and it does little or no good, he ought not to be surprised. What he needs is a manure containing a little soluble phosphate and a good deal of soluble nitrogen; what he buys is a manure containing little or no nitrogen and a good deal of phosphate. Dr. Collier may report that the fertilizer is what it pretends to be, and is worth the money charged for it, but it should be remembered that all these reports on fertilizers claim to tell us is, not what they are worth to the farmer, gardener or fruit grower, but simply what the ingredients they contain can be bought for at retail in the market.

We have several acres of currants and sell the fruit to a canning establishment. Last year the proprietor said to me: "What can we do, Mr. Harris, to induce farmers to raise more currants and raspberries?" "Pay more for them," I replied, and he seemed greatly disgusted. Improved agriculture and horticulture will not enable us to grow cheaper products, but better. The judicious use of fertilizers will not enable us to grow apples at 25 cents a bushel, but they will, combined with careful selection of varieties and good general management, enable us to raise apples better worth \$1.00 per bushel than the fruit from a starved and neglected orchard is worth 25 cents.

Great advances are made all the time in the introduction of improved varieties of fruits and vegetables, and this necessitates cleaner and richer land. Thirty or forty years ago we thought tomatoes must have poor land or they would run all to vines. Now our improved varieties will stand a liberal dressing of superphosphate and nitrate of soda, and it is not easy to determine who exhibits the greater folly the man who fertilizes his land and then plants poor varieties or the man who plants the best and most improved varieties and then neglects to furnish them with a liberal supply of appropriate and available plant food.

Prof. Bailey, of Cornell University, has shown, not only that an improved variety of tomato will stand heavy manuring but that it doubled the crop of fruit and gave tomatoes that were smoother. He put on 66 tons of "old and fine stable manure" per acre, containing, I presume, not less than 660 lbs. of nitrogen, or as much as would be furnished by a dressing of 15 tons of average commercial fertilizer. On an adjoining plot, on poorer land, he applied 200 lbs. of nitrate of soda alone per acre, containing 32 lbs. of nitrogen, and it increased the crop of fruit from 6½ lbs. per vine on the unmanured plot to over 9 lbs. per vine. On the plot receiving this small dressing of nitrogen the vines had very dark foliage, which shows

that they would have been all the better for a dressing of superphosphate with the nitrogen.

I am afraid of occupying too much of your valuable time and will mention only one more fact just brought to light at Cornell University. It has been hitherto supposed that sugar beets grown on rich land was poor in sugar, but Prof. Snyder found that the crops of beets producing the greatest yield per acre contained the largest per centage of sugar. The explanation is practically this: The varieties of beets have been so greatly improved that, like the improved varieties of tomatoes, they will stand heavier manuring than formerly.

GARDEN NOTES.

There is nothing prettier than a long, narrow bed of pansies, two feet wide and eight or ten feet long. I had admired my own bed greatly, but the superb ones I saw in Boston, last June, in front of the Vendome Hotel, on Dartmouth street, surpassed in quiet, interesting beauty anything of the kind I had ever seen. Like a gay streamer of ribbon trailed along the handsome grass-plat they grew luxuriantly, smiling in the sunshine, and doubtless, with the care they received, were beautiful until snow came.

My flower garden has three terraces, and at the edge of the upper one, each side of the steps next to the grass border, I sowed sweet peas, digging a trench about four inches wide and six deep, sowing the seed very thickly, covering about an inch, sprinkling with phosphate. Then I laid spruce boughs over them, and as soon as they came up I again covered them with soil, repeating the process until the surface about them was level. After which I gave them a support of spruce boughs, and about a four-inch dressing of well rotted manure. How they did grow, and bloomed until frost came. I gathered a ten-quart pail full day after day, and yet there remained as many more. I had feared I should not succeed, as the situation was so hot and dry, the terrace having a sloping elevation of some twenty feet on one side; but I am confident, no matter what the situation or soil, all lovers of this flower may enjoy them in abundance.

I find that to be successful in any work in this world constant vigilance is the first factor, and especially is this true with regard to tea roses. This always lovely, interesting and fragrant flower has many enemies, like beautiful characters and essential fruits.

The green-fly troubled me most last

summer, but when my patience became quite exhausted, I procured some aconite at the druggist's, and put about one teaspoonful into one quart of water, hot as I could bear my hand in, and sprayed my bushes about mid-day. At three o'clock I repeated the dose with what remained of the first mixture. The next morning I gave a close investigation, but could find no green-flies. After three days, however, they reappeared, and I repeated the experiment once a day for about a week, after which I had little difficulty in exterminating what appeared with my thumb and finger. But how my roses thrived and bloomed afterward! I was well repaid for my pains and labor as well as backache, and next to my sweet peas they were my greatest delight in the garden.

Pot roses require careful attention always, but the two most essential things are freedom from insects and watering, and to insure bloom pruning. Plants one year old are benefited by repotting and a careful washing of the roots, if pot-bound, is of great importance. When in flower apply an occasional stimulant of liquid manure.

M. A. HOSKINS.

VILLAGE PARKS.

The subject of village parks, to which some space was devoted last month, we hope to bring again to the notice of our readers, and to this end desire to have the assistance of those who may be able at the present time, or during the next few months, to supply us with photographic views of village parks that have already been established in any part of the country. We have already been placed in possession of considerable information in regard to the public parks of a village in this State, and later expect to have photographs and make engravings for illustration. But we do not wish to confine attention to this State, and hope that in all parts of the country a few persons, at least, may be sufficiently interested to let us hear from them about the improvements of the character named that they have knowledge of, and supply us with views of scenery. Trusting that our readers will give this matter a second thought and that some of them may be able to help us to show the public the beauties of their public pleasure grounds

we ask a cordial coöperation, and in order that there may be some immediate movement we would ask that those who can or will try to assist, in the manner indicated, will notify us at once to that effect.

GERMINATING HAWTHORN SEED.

In the MAGAZINE for February I see one inquires how to hasten the growth of hawthorn seed. Supposing this species to have similar seeds to our native thorn, I reply: Boil the fruits as gathered twenty minutes, lay them on the ground to remain all winter, and they will come up in the spring.

E. S. G.

BELLADONNA LILY—THRIPS.

1. How shall I manage a belladonna lily to have it bloom? I have had mine three years. It seems to grow well; the bulb is fully two inches in diameter, and has thrown up several offsets. Should the bulb be entirely covered with soil? When ought it to be started into growth, and when dried off? It seems now to have finished growth for the season, but is still green.

2. How can I get rid of thrips, or prevent their appearance the coming season? For three years they have infested out-door roses, and have nearly ruined them. I love the roses so, it is hard to see them spoiled as they have been of late.

F. K., *Saybrook, Conn.*

1. The belladonna lily will require the spring months to perfect and ripen its bulb, although its growth of foliage has ceased. Continue to give the plant water as it requires. The latter part of May begin to decrease the supply of water and by the last of June let the plant go so nearly dry that only the least moisture is maintained in the soil, and in this condition keep it until the last of August. At that time it will be ready to start again, and should begin to put out its flower stems. Then is the time to resume watering, lightly at first, and increasing as the plant can use it. It is best that the bulb should be entirely under the soil.

2. The thrips is a troublesome insect to contend against. Some success is met with by syringing the foliage on the under surface with whale-oil soap solution. Another way, which with a small number of rose bushes might be employed, is to mount a sheet of sticky fly paper on a light frame and hold it over a plant while shaking the branches. A considerable number of the insects will be caught, and by repeating the operation their numbers

can be lessened. By going about the plants at night with a torch the insects will destroy themselves by flying into the flame.

RESURRECTION PLANTS.

I have what is called resurrection plant, a species of evergreen, opening and closing by moisture or dryness, and have recently learned the real resurrection plant was called the Rose of Jericho, and does not at all resemble mine; and also that it is very expensive and not obtainable in this country. Will you be kind enough to give some information on the subject, and oblige?

L. P. J., *Springfield, Ill.*

The information called for has several times been given in the MAGAZINE. The plant L. P. J. describes as having is *Selaginella lepidophylla*, and the Rose of Jericho belongs to the Cruciferae or cabbage order, and is botanically known as *Anastatica hierochuntina*. Both of them, however, are called resurrection plants. A reason why *Anastatica* cannot be procured here is because it is not very desirable, and consequently is not frequently imported. The latter is a skeleton of seed branches having hygrometric properties by which it expands with moisture and shrinks together when dry. It comes from the deserts of Syria and Egypt. The name Rose of Jericho is the more common one for this plant, and Resurrection Plant for the *Selaginella* referred to, the latter coming from California. This is really ornamental as well as interesting. Both of these are figured in volume V, page 107 of this MAGAZINE.

AMARYLLIS EMPRESS OF INDIA.

The flower of this variety is one of the grandest of all the amaryllis tribe, frequently measuring seven inches or more in diameter. The color is a rich scarlet with a greenish center toned out and feathered in pure white.

The bulb is large and throws up large, long leaves, and a strong flower stem bearing at its summit several buds which open in succession.

The cultivation of this variety is the same as that of the well known and popular *A. Johnsonii*, and, like it, Empress of India is undoubtedly destined to become one of the most generally cultivated and highly prized of all these handsome plants which, by their very nature, must always remain sufficiently rare to make a sight of their beauties a rich treat.

ELM TREE BEETLE.

What can be done to preserve the elm trees? There were four beautiful ones on our ground, one has died and we are fearful of losing the others. Cause—elm tree beetle. Please suggest remedy.

MRS. R. S. H., *Westford, N. Y.*

Dr. LINTNER, our State Entomologist, advises for the elm tree beetle, to spray the trees with London purple, one pound to two hundred gallons of water. Use a force pump and rose with a Nixon nozzle, such as are made by the Nixon Nozzle and Machine Co., at Dayton, Ohio. For tall trees a long rubber hose will be needed the end of which can be attached to a light bamboo rod, and thus elevated to reach the higher parts of the trees. If too tall to reach in this way, then a man with a knapsack sprayer in the tree will be able to do it. It must be done early, before the first traces of injury to the leaves is perceived. One spraying will usually be sufficient, but if a rain coming immediately after application should wash it off, or if it is noticed after spraying that the insects are eating the leaves, repeat the operation.

KEEPING CELERY.

I have been experimenting with celery in my garden, and as the results are so good I will describe my manner of preserving it; for I can keep it till next June without any loss, and the flavor is very superior to any I have ever known, that rank taste is all gone and it is fresh and brittle.

I trenched out six inches deep and eighteen inches wide, and set my plants seven inches apart, two rows in a trench seven inches each way, but put each plant opposite the middle of the space in the other row. I banked up when the plants were two-thirds grown, and last fall, when the weather began to get cold, I set a board on each side of the rows and put a board over the top with sticks across to keep snow from breaking it down, and covered it with straw and manure. In this way it continued to keep as perfect as it was in October. I don't find a leaf that is decayed. The ground don't freeze, and when there is a warm sunny day I have a row taken out and put it in dirt, in the cellar, and it keeps there as nicely and as long as if taken up in the fall. Celery does not ripen after it is taken up in the

fall, but will blanch and retain the strong celery flavor. Where it is not disturbed it keeps perfect and ripens as much as fruit does. This is new to me, and if you have not tried it I think you will be pleased with the result. I think cauliflower can be kept in the same way. A. W. E.

ROCKY MOUNTAIN EVERGREENS.

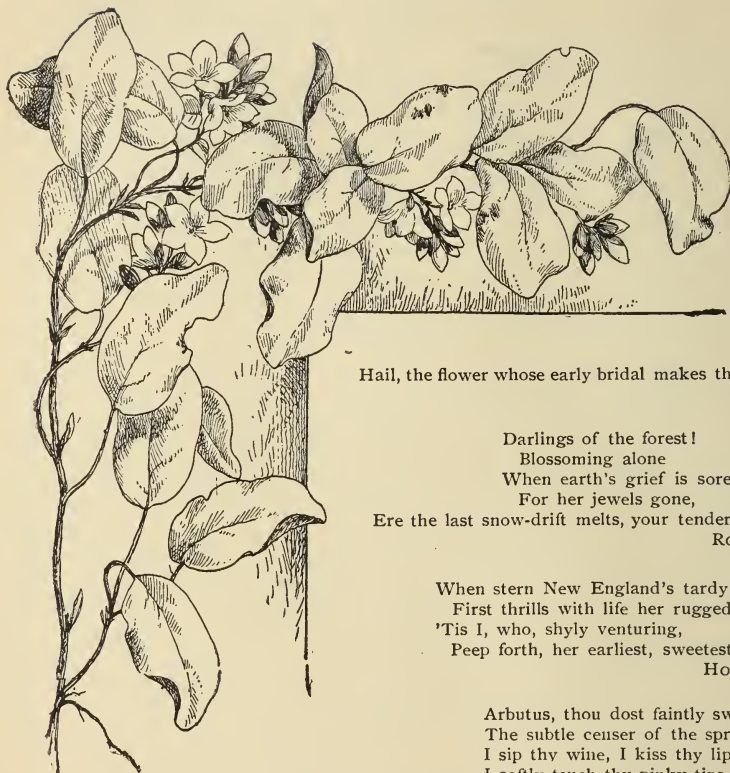
The peculiarity of the climate of the Northern States is such that in the cultivation of evergreen trees we have been practically confined to the use of a very few species. The Norway spruce, Austrian pine and Scotch pine have been most employed, and to a less extent the hemlock, the red cedar and the black and the white spruce. But, in fact, the two first named have been the main dependence generally. It is not improbable, however, that the Rocky Mountain evergreens are to play an important part in the enrichment of our gardens and landscapes. They have been tried in various places and found to be hardy. Some of the best of them are *Abies concolor*, *A. Engelmanni*, *A. Douglassi* and *A. pungens*. W. S. LITTLE, nurseryman of this city, sends out a catalogue of ornamental trees and shrubs, containing descriptions of these varieties of evergreens.

POPULARITY OF THE ROSE.

One of the best evidences of the esteem in which the queen of flowers is held is the fact that it is bought and planted in immense numbers every year. The extensive cultivation of the rose in this country, for commercial purposes, was first commenced in this city by the firm of ELLWANGER & BARRY, and, although now greatly extended, this well known firm still holds a leading position in this culture. A catalogue of roses which they have lately issued contains descriptions of two hundred and fifty varieties, arranged in their appropriate classes. The descriptions are very carefully written, stating the actual facts concerning each variety, and without exaggeration. The name of the originator and date of introduction of each variety is given. It can truthfully be said that this is the best rose catalogue issued in this country, and is conceded to rank as a trustworthy authority on roses.

TRAILING ARBUTUS, OR MAYFLOWER.

EPIGÆA REPENS.



Hail, the flower whose early bridal makes the festival of spring.
ELAINE GOODALE.

Darlings of the forest!
Blossoming alone
When earth's grief is sorest
For her jewels gone,
Ere the last snow-drift melts, your tender buds are blown.
ROSE TERRY COOKE.

When stern New England's tardy spring
First thrills with life her rugged breast,
'Tis I, who, shyly venturing,
Peep forth, her earliest, sweetest guest.
HOPESTILL GOODWIN.

Arbutus, thou dost faintly swing
The subtle ceuser of the spring.
I sip thy wine, I kiss thy lips,
I softly touch thy pinky tips,
More than I say thou art to me,
A past and still a joy to be!

ANON.

Sweet welcome to thee, dainty, winsome flower!
Beloved! bringing joy for April's tears,
Upspringing in the track of wintry fears
That ghostly haunt spring's timid, 'wakening hour.
The banished months have left thee beauty's power;
The autumn, crimson blush; its snowy kiss,
The dying winter; And the summer's bliss
Of fragrance in thy breath — a precious dower!

ANNE HALL.

I wandered lonely where the pine trees made
Against the bitter east their barricade,
And, guided by its sweet
Perfume, I found, within a narrow dell
The trailing spring flower, tinted like a shell,
Amid dry leaves and mosses at my feet.

From under dead boughs, for whose loss the pines
Moaned ceaseless overhead, the blossoming vines
Lifted their glad surprise,
While yet the blue-bird smoothed, in leafless trees,
His feathers, ruffled by the chill sea breeze,
And snow-drifts lingered under April skies.

WHITTIER.

OUR YOUNG PEOPLE.

A NAMELESS STORY.

IN TWO CHAPTERS.—CHAPTER II.

After Carl's mysterious disappearance there was no more sleep for his mother, Isabel and Effie. They could only sit weeping and moaning, clasped in each other's arms, while making groundless conjectures as to whither the boy could have gone.

If only his father were at home, they said, such trouble could be more easily borne. He would know exactly what to do. But a telegram had informed them of his sudden call to a distant city. So to that point they determined to send a dispatch as soon as daylight should appear. Isabel, herself, would take it to the office, for the reason that no one must know of the family disgrace—for such they felt it to be.

Fortunately, Blanche rested unusually well, so that no tinkle from her bell called them to her bedside. When at last it was her breakfast hour, little Tot was sent to her room to wait upon her.

"They're all so busy, they sent me this time," she said. "What shall I do first?"

"You may set away this precious little night lamp that you gave me on Christmas. It has been a great comfort to me."

"Why don't you call it what you did at first? I like that the best."

"What did I call it? I've forgotten."

"You said it was 'a dear little, sweet little, cute little lamp.'"

"And that's just what it is. And you are a dear little, sweet little, cute little girl; that's what you are. Now help me on with my dressing sacque, and then you shall brush my hair, which you so much like to do."

While this sweet intercourse is going on in the invalid's room, Isabel has driven back from the telegraph office and reports that in answer to her message that Carl had run away, came back the word:

"Let him run; when he gets enough of it he'll come back. Don't worry."

Each one instinctively knew that Mr.

Brewster felt no such indifference as the telegram implied, but that he wished the family to be distressed as little as possible over the event. Isabel related how she had driven to the station thinking to inquire of the ticket agent if he could recall to what point her brother had bought a ticket the night before, but as the mortification that such a question would imply rushed over her, a trembling and faintness had seized her, and her heart so utterly failed her that she had turned about and driven home.

The sickening sense of trouble that oppressed them all unfitted either one for attending upon Blanche in the usual cheery way, and even the mother shrank from entering her room, though she set about to force herself to assume something of her usual demeanor for the precious girl's sake, but was disheartened next moment at sight of the face that met hers in the mirror.

Suddenly Effie seized upon a happy idea, and said she would drive to the parsonage and tell the pastor and his wife of their trouble, and bring Mrs. Blake home with her to spend the day. She would be just the one to occupy Blanche's attention — and perhaps — oh, perhaps — by evening, Carl would have become sorry and be back again.

As for Carl, matters had not gone with him just as he had planned. He had twenty-five dollars of his own, and with a part of this had bought a ticket to a lake city, where he expected to have no trouble whatever in securing a desirable place on board a lake steamer, where everything would be novel, fascinating and jolly, and where even the work to be done would be but a merry pastime, just as it was on the Merry Rover, in the story he had just read, entitled, *A Young Sailor's Fresh Water Cruise*. This was what Carl had planned; but what really happened was quite different.

Being very sleepy after boarding the late train at the home station, he had soon fallen into a deep sleep. One of the light-fingered gentry, who are always on the alert for such as he, soon adroitly relieved him of his purse, containing not only his money but his trunk-check, and passed into another car.

When the station was reached where Carl was to leave the train, he still slept on, and in the bustle of changing passengers no one whose business it was took the trouble to arouse him. He was one of those boy-sleepers in whom sleep becomes a profound lethargy. Not only brain but the limbs, the body—the entire animal is dead asleep. A tumble to the floor makes no impression; a pin thrust in the flesh is unfelt. So, while he lay there, deaf to all sound and dead to all sense of his surroundings, the pickpocket was presenting his check and claiming his trunk, and soon thereafter was driven away in the darkness, and Carl never saw his trunk again. Truly, a poor beginning this for a young traveler!

As the morning began to dawn, a new conductor discovered Carl, who, by dint of much shaking and bumping, got him at last to understand that he was to show his ticket. But no ticket could be found, no purse, no anything.

By this time he was fully awake and fully understood, when told, that he was a hundred miles beyond his destination. He also soon realized that the conductor disbelieved every word of his story. This angered him.

"O, you needn't get mad," said that official. "I know all about your sort of chaps. You're a runaway, stealing a ride under cover of night. If this were not the fast express, I'd pull up and throw you off right here, ten miles from anywhere. As it is, you'll be put off at the next station so promptly you won't know who you are."

"I can get off myself," said Carl, hotly, "and I tell you again, I'm no sneak, stealing a ride."

"I know just what you are," was the answer, "and shall take the greatest pleasure in assisting you off this train."

But Carl was on the alert, and before the train had fully stopped, he left it with a leap that imperiled his life, but happily he escaped injury. Looking about him

he found everybody rushing for breakfast. He saw the long tables, smelled the savory steaks and steaming coffee, and felt a ravenous sense of hunger. But there being no breakfast for penniless strangers he went to the waiting-room and sat down to think.

It was Sunday morning and there was no work to be had, even if he had made up his mind to work, which as yet he had not. Of course, he shouldn't starve without his breakfast, but by dinner time his hunger was sure to be unbearable. As for asking any one to give him food, he'd die first. He didn't propose to turn beggar just yet—not he.

As his process of thinking evolved no method whereby to appease hunger, he finally sauntered outside, where he encountered a couple of "thugs," whom the police were that moment watching. The fellows judged by his moody, aimless air that he would be ready for any business that promised booty. So they addressed him in a friendly way, and proposed a walk. It was not long until they confided to him that they had "spotted" two or three houses the night before, and propose to tap them the ensuing night, inviting him to join them and go shares. This proposition all but took Carl's breath. Throwing out a clenched fist, he exclaimed:

"You infernal rascals! What do you take me for? You're entirely mistaken in your fellow," and wheeling about he returned to the station. But a detective had seen the whole performance, and upon addressing Carl soon learned enough to warrant the immediate arrest of the two burglars, much to Carl's satisfaction.

But that job being completed the detective remembered the youth who had so indignantly repelled the overtures of the house-breakers, thus leading to their arrest, and questioned him in a friendly way, having judged by his manner that he must be stranded. Carl frankly told him of his ill luck and concluded by saying:

"I've not been from home twenty-four hours yet, and I've been called a liar and a railway sneak, and threatened with violent ejection from the cars, and now I'm selected as a fit pal for jail-birds."

"Well, it's noon now; let's go in and

get some dinner, and we'll talk the matter over," said the thoughtful detective, taking his arm.

"You forget I've no money," said Carl, drawing firmly back.

"No difference about that; come along."

"But it does make a difference," said Carl; "I shall never be hungry enough to allow strangers to feed me from pity or charity. I'm no highway tramp."

"Good for you, only that you draw the line rather strong. Now let me tell you something. Five dollars is your due for the services you rendered in helping us to identify those burglars. Here's your money, and if you insist upon paying for your dinner out of it, very well. Now come right along."

Carl reluctantly took the money, feeling uncertain whether or not the man had fabricated the idea of his having a right to it. During the meal his newly found friend advised him to get work on the morrow to replace his lost funds, adding, that he'd direct him to a cheap boarding house for the present, and that, of course, he'd want to return to his home as soon as possible. But Carl had no idea of going home at present.

On Monday morning, when he sauntered into the streets he was moody to find how his capital was reduced by three meals and a bed, and it angered him to think of having to go to work, when that was what he had left home chiefly to avoid. Strolling past where a lot of fellows were idling in the doorways, he saw a fat wallet on the pavement, and hastily picking it up he found inside only a wad of waste paper and a card, with these words, "April fool." Flinging it from him in disgust, his ears were assailed by shouts and yells from the loafers, who proceeded to secure the wallet and replace it as before, to be-fool some other unwary passer-by.

Going aimlessly on, Carl soon found himself in handsome suburban streets, where the citizens seemed to be vieing with each other in beautifying their already beautiful grounds. The lovely April morning had brought out matrons and maidens as well as the masters of the various premises, to oversee or to take part in the various improvements going on. Low arbor-vitæ hedges and arches were being trimmed, and the

ground enriched about the old English ivies, some of which completely draped the north ends of different mansions. Clumps of flowering shrubs, here, there and everywhere were being thinned out, and wire netting stretched across piazzas to support summer vines.

Rose beds were being carefully uncovered and new ones made, as attested by the baskets of freshly labeled rose bushes ready for setting out. The beds and borders of tulips, hyacinths, narcissus and daffodils, many of them already quivering into bloom, astonished Carl by their numbers.

"The people here must be flower-crazy," he thought, and turned disgusted into a cross street. But it was the same there. The propitious season and the delightful weather had infected all alike. Even Carl began to feel the mellowing influence, and wondered if it would be so disagreeable, after all, to work a little on such pleasant grounds, and where so many others were busy for company.

Finally, he paused where but one workman was engaged on a very large lawn. A noble looking, elderly man, bare-headed, seemed to be giving instructions. A sudden impulse seized Carl to ask this man for work. He was immediately shown where the outline of a large bed was marked off with cord and pegs, and was asked if he could neatly cut and lift the sod from inside those lines. He was almost struck dumb to find the very work thrust upon him that he had evaded at home, but answered that he thought he could do it all right, and after some instructions was left to himself. The shape of the bed, too, was almost the same as his father had outlined—an oblong, hollow square, or parallelogram, with a space midway each side and end for entering within, and in the center a long, oval bed. Carl pondered, as he worked, over the strange fatality that had followed him. He couldn't see how this could be just "a happen so."

His dinner and supper he took with the workman, and with blistered hands and aching back was glad to occupy a clean bed in an outbuilding of his employer. Too tired to sleep, he continued to marvel over this mania for flowers that seemed to possess the people. He had thought his own sisters foolish enough

about them, but the daughter of this family went quite beyond them. Never before had he heard so much talk about flowers as during that one day. Flowers! what were they good for, anyway? He determined to puzzle his employer by asking him. So, next day, sure enough, he began:

"Will you be so kind, sir, as to tell me of what use flowers are?"

"Of what use? You might ask that of the choicest paintings and sculptures in the world, or of anything that is beautiful in form and color that was ever fashioned by the hand of man, and few people would deign to give you an answer. But flowers are developed from the brown soil, already fashioned and tinted. No mortal can tell how they get their beautiful forms, so very different from the rest of the plant, nor whence nor how comes their varied and brilliant coloring. It is all a mystery—a mystery at once inspiring and elevating. Their delicacy and beauty are refining, their endless variety is a continual marvel, while the purity of their loveliness is a joy forever. I am glad you asked me this question; I shall take the subject for next Sunday's sermon. But you asked, of what use are flowers? Go ask the honey bees. Do you like honey on your warm muffins? Of course, you do. Go ask the humming birds and the myriads of butterflies that brighten the air.

"But now let me tell you how I look upon flowers. In the first place, the Creator provided a bountiful variety of grains, fruit and vegetables, and that, too, greatly in excess of our actual needs. These show his wonderful *care* for us. Now, it seems to me, that while He was doing this, He thought of the flowers and willed them into existence to beautify the earth for our especial pleasure. So, these, to my mind, represent His great *love* for us.

"The staples of life, you understand, prove God's care for us; but the flowers, my boy, represent His love.

"I know that, for me, His love bursts out in the blossoms, and His smiles beam upon me from every simple flower; hence I must have as many around me as possible. This north side of the house has been neglected, but God has made flowering plants and vines for every

possible situation, and there are many that will thrive right here."

By this time Carl had become convinced that some unknown influence, good or evil, had sent him to that very place to do the work that he should have done for his sister, Blanche. He had never felt so strange in his life before. A rush of feeling came over him that completely broke down his obstinacy. He began to wonder if he could ever earn money enough to pay his way home, and then he wondered if he could walk the distance, and how long it would take him.

Thus passed two more days, Carl becoming every hour more restless and unable to understand his own feelings. He did not know that when the knowledge of his absence could no longer be kept from Blanche that she had given one outcry of pain, and then, clasping hands, had said, "I will pray for him; I'll pray him back home again," and her quiet faith from that moment was brought to witness.

A little grand-daughter of Carl's employer often came to chatter with him, and reminded him of Tot. While talking with her, toward the evening of the fourth day, an aunt of the child, with a paper in her hand, came to her father on the piazza, near by, exclaiming:

"Papa, listen to this," and then purposely read, loud enough for Carl to hear:

"In the list of deaths caused by this morning's railway disaster will be noticed the name of the popular citizen and widely known Mr. Carlton Brewster. His lamentable death is the more afflicting because of the unaccountable absence of their only son. It is believed that an invalid daughter cannot survive the strain of this double sorrow.—"

Then followed a personal description of Carl, with a request for papers to copy. Ere the reading was concluded, Carl had thrown himself upon the ground, with his face upon his crossed arms, in an agony of remorseful grief. The clergyman thought best to leave him to himself for a time, but the little girl, full of sympathy, stooped down and questioned him, child-fashion:

"What is the matter? Did you get hurt, say?"

"O, that was my father that was killed, and I ran away from home, and now I'll never see him alive again."

"Did you have to run away 'cause they were cross to you? . . . Say, did you?"

"No, I was cross to them."

"Didn't—didn't they give you enough to eat?"

"Yes, they did."

"Well—well, wasn't they good to you when you was sick, and your head-ache ached?"

"Yes, they were."

"Well, then, what made you be cross, and what made you run away?"

"Because I didn't want to do any work."

"Well, then, you are the baddest boy I ever did see." And her verdict being given, she trotted off and had no more to say to him.

Presently her grandpapa approached Carl, and inquired if he would like to go home.

"O, I would, I would," he said. "and yet it will nearly kill me to meet them."

"Tell me your pastor's address, and I will telegraph to him that you'll be at home to-morrow, and I'll put you on the night express at eight o'clock."

"O, thank you; and I'll return the money when I get home."

"Never mind about that; you have part enough due for your work."

So all was arranged. The good Mr. Blake met Carl at the station and drove him directly home, where, to his unspeakable joy, he found his father alive, and though suffering from a serious injury, he was quite able to give his son a warm greeting. Blanche had been so revived by the news, through Mr. Blake, that she was radiantly happy. The sad report first received of her father had not been allowed to reach her.

Before night, Carl was overheard telling Blanche the names of various flowering plants that would thrive on the north side of a building, greatly to the amusement as well as amazement of the other sisters. Also, he declared they must have a lot of tuberose and dahlias and gladioli, for he'd learned, while he was gone, that there can't be too many flowers about a home. Then, whispering to Blanche, he said: "I'll tell you, sometime, what a minister told me about flowers, and he said I'd given him a subject for a flower sermon."

MARIA BARRETT BUTLER.

THE GOOD TIME COMING.

Hark, boys and girls! Somewhere I heard,

Just now, a gentle whisper:

'Twas murmured low and soft and sweet

As faintest evening vesper.

Now, listen! There it is again,

Our floral queen is coming,

And all the little birds, they say,

Are first rehearsals humming.

The knowing twigs are busy, too,

About their new style dresses,

With nature's milliner, who knows,

And never fits by guesses.

The trees are nodding, here and there,

And giving friendly greetings,

And pussy-willow at the front

Gives voice to all the meetings.

The tiny rills are on a chase,

With chatter and with laughter,

They leap and dance from rock to rock,

From wavelets coming after,

O, boys and girls, 'tis very sure,

Good times for you are coming,

For don't you hear the partridges

In yonder forest drumming?

Then go to work at once, and get

Your hardest lessons over;

The tasks well done, there'll be good times

For every busy rover.

MRS. M. J. SMITH.

OLD GEMS RESET.

A PARADOX.

Would'st thou make smooth life's rugged path?

Then with self-sacrifices pave it;

No words more true the scripture hath—

Man needs to lose his life to save it.

"WHILE THE DAYS ARE GOING BY."

Each day we live is, sooth, a little life;

And longest life but many days repeated;

Make, then, each day with noble deeds as life

As if that day thy life should be completed.

PHILIP BURROUGHS STRONG, *Malone, N. Y.*

THREE CURIOUS MICE.

There are many varieties of the mouse family, one of which is well known, the common house mouse. This really pretty and graceful little creature is very tormenting on account of its destructive habits, which involve damage and loss to food supplies, personal clothing, and nearly all household goods. It is, therefore, properly considered as an enemy to the human race, and is trapped and always killed as soon as caught.

Mice of different kinds are found in nearly every part of the world, and some

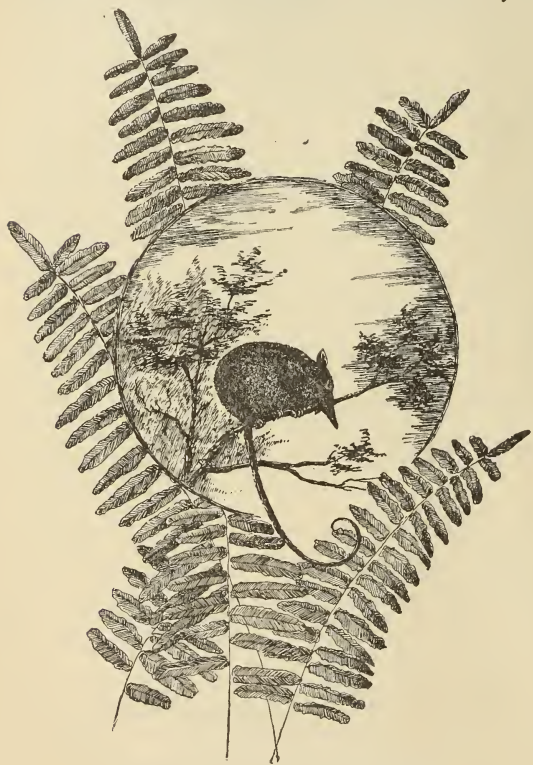
of the species are exceedingly interesting. One, called *Tarsipes rostratus*, is a native of Australia. It is about the size of the common mouse. Its muzzle is long and pointed, with small mouth. The tail is longer than the head and body combined, and is prehensile, and as it makes its home in trees and bushes, it uses the tail in swinging from branch to branch. Its food is honey, which it extracts from flowers with its long tongue, as the humming bird does.

The harvest mouse of England, is a most interesting little creature. One of the smallest of quadrupeds, for it measures, head and body combined, only two and a half inches long, with a tail almost as long. This mouse is found in the hay and wheat fields, and it is there that it makes its curious nest of grasses and leaves, the latter cut in shreds by the little animal, and woven together to form a complete ball with an opening so small that it cannot easily be found, and which closes immediately upon the exit or entrance of its occupant.

It is in this nest that the mouse raises her family of little ones until they, in their turn, are large enough to go forth into the world to make their own way in life.

The wood mouse, or long-tailed mouse is still another species. It is a gentle, timid little creature, but easily tamed, some what larger than the common mouse. As the harvest mouse, it is also found in grain fields, where it is very tormenting to the farmer, for it carries off a generous supply of the grain, which it stores away just under the surface of the earth, or hides in thick tufts of grass for its own use. Of the many species of these little creatures which are scattered over the world, these are a few of special interest.

M. E. B.



THE LONG-TAILED AUSTRALIAN MOUSE.



"HERE YOU ARE"

Said Jack, pulling a bottle of Ayer's Sarsaparilla out of his ample pocket. "This is what saved me years ago, when my blood was pizened with disease, an' I was on the way to Davy Jones's locker. Look at it!



Ayer's Sarsaparilla

A shipmate told me what it did for him, so I went an' took it, an' it give me sich an over-haulin' that in less than five weeks I shipped agin, with a clean bill o' health. Since then, I never go to sea 'thout a bottle o' this stuff in my kit, just to keep me in trim, you know."

Jack is sensible. Ayer's Sarsaparilla not only expels the taint of scrofula and other blood-poisons from the system, but it frequently proves an excellent anti-scorbutic.

"Twenty years ago I was a harpooner in the North Pacific, when, with five others of the crew, I was laid up with scurvy. All our lime-juice was accidentally destroyed, so we were pretty badly off; but the captain had a supply of Ayer's Sarsaparilla, and gave us that. We recovered quicker than I have ever seen men brought about by any other treatment for scurvy."--RALPH Y. WINGATE, *New Bedford, Mass.*

Ayer's Sarsaparilla

Prepared by Dr. J. C. Ayer & Co., Lowell, Mass. Sold by all Druggists.

Has Cured Others, Will Cure You.

SORE THROAT

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
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No. 4.	Collection of 100 varieties of Fine Annuals, Biennials and Perennials,	5 00

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No. 1.	Complete Collection of Vegetables, for small family garden,	3 00
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The No. 1 (\$3.00) Collection is composed as follows: Asparagus; Beans, Dwarf or Snap, and Lima; Beets, early and late; Cabbage, early and late; Cauliflower; Carrot, Shorthorn; Celery; Corn, early and late Sweet; Cucumber; Egg Plant; Lettuce, Cabbage and Cos; Melon, Musk and Water; Onion, Wethersfield and Danvers; Parsley; Pepper; Peas, early and later; Radish, three sorts; Salsify; Squash, Summer and Winter; Spinach; Tomato; Turnip, White and Yellow; Herbs, Sage, Summer Savory, Broad-leaved Thyme.

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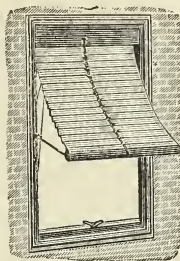
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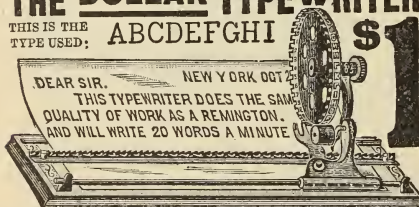
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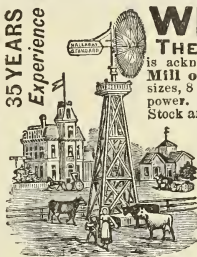
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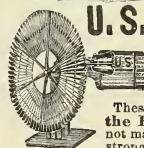
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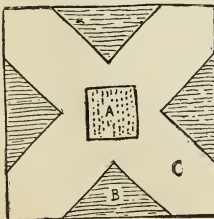
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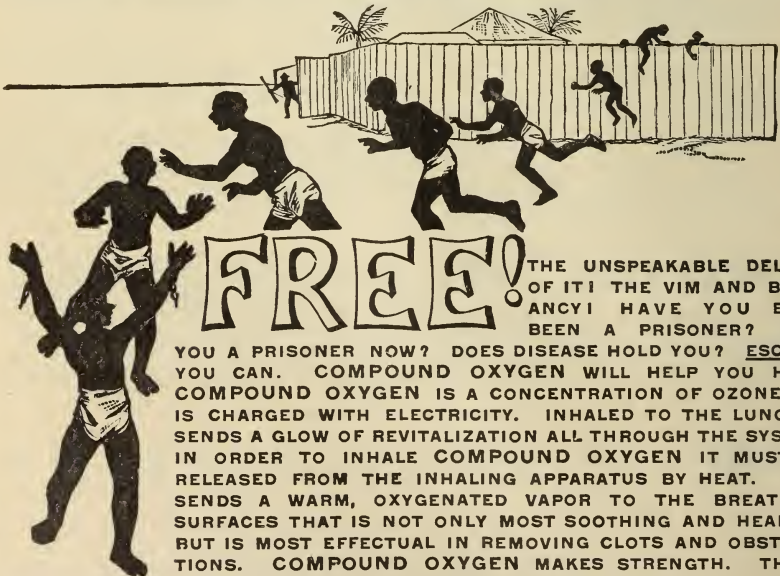
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Vol. 14.

No. 5

Vicks
Illustrated
Monthly
MAGAZINE.

MAY 1891.

Published by JAMES VICK, SEEDSMAN, Rochester, N. Y.

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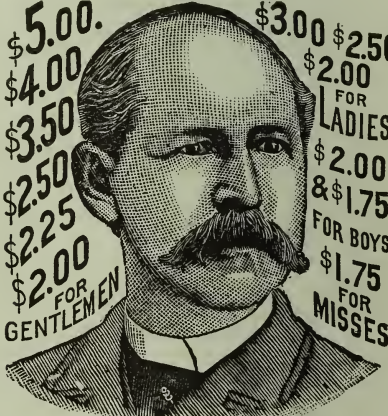
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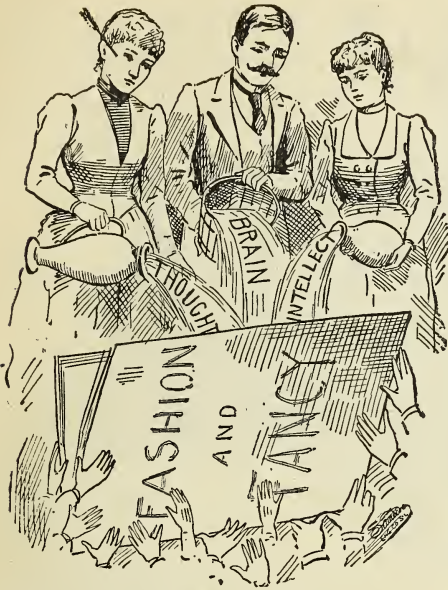
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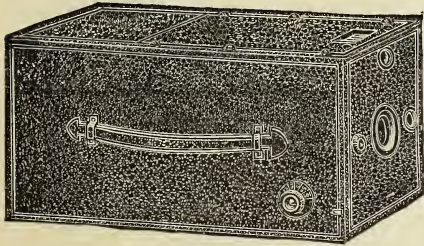


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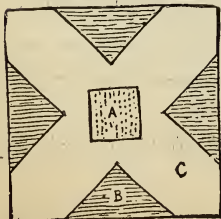
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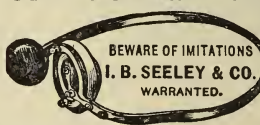


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MAY, 1891.

THE PRESENT time must be considered the spraying era in the history of gardening. The tinsmith's art produced the sprinkling can, thus providing a means of supplying water to plants in the form of natural rain, wetting the whole ground more evenly than by the more primitive mode of pouring. Perhaps moisture cannot be taken up directly by the leaves of plants, but garden-

ers soon learned that moistening the leaves of their plants under some conditions of air and temperature was beneficial, and especially was this true in the case of plants growing under glass, and even when the soil was sufficiently moist. A small quantity of water is sufficient to moisten a great amount of foliage if it is applied evenly and in fine particles. This we see in mists and heavy fogs; hence the garden syringe was produced to meet this want, distributing a very small quantity of water over a large surface; by its use both the under and upper sides of leaves can be moistened, and tall reaching plants can be operated on as easily as low-growing ones. The grape grower under glass would be quite at a loss without the aid of his hand syringe to spray his high, spreading vines at the close of a

hot summer day. But the use of the hand syringe revealed something more, which was that insects could better be kept under control when it was properly and systematically used. The red spider, the special pest of the vinery, can be held in subjection by its use, and thus, also, most other insects can be more easily managed. Thus the first step in subduing insects by spraying was in the use simply of water. Later it was found that the use of some disagreeable tasting or smelling substances, diluted in water, produced better results in destroying some kinds of insects than merely water. The insects of the aphid family are most persistently injurious to all kinds of vegetation, and in the progress of the spraying evolution these early received attention. Among other solutions soap and water was found to be destructive to them; whale-oil soap for this purpose is considered particularly good. An inquiry into the cause of the destructive effect of this substance on insects led to the discovery of the physiological effects of oil on the spiracles or breathing organs of insects, which so clogs them as to cause death by asphyxia. Here, then, practical entomology came to the assistance of the gardener, and in the last twenty-five years this science has nobly ministered to horticulture. An examination of the garden literature of fifty years ago will show that little or nothing was known at that time of means whereby to combat even the commonest insects; the whole advance in this art has been in the last half century, and more especially in the last twenty-five years. It is somewhat foreign to the present train of thought, and yet not irrelevant, to mention Dr. C. V. RILEY, the entomologist, as the leading spirit in the discovery and application of insecticides. His entomological studies have always had a practical side, and have given him a world-wide fame, and his example has been the means of leading into the field a host of fellow-workers. In this great work our national and state governments have lent their aid, and at the present time the gardener, the fruit-grower, and the farmer are masters of many, or perhaps most, of the kinds of insects that injure their crops. The introduction of the Colorado beetle to our potato fields made the practice of spraying general among

farmers in this country when it was learned that by the use of Paris green diffused in water the insect could be expeditiously destroyed. From the hand sprinkling can with which to apply this water, to a cart carrying a cask with a distributing tube behind, was but a step, the moving force of the liquid being simply gravitation; but though a step in advance, it was soon seen that there was too much waste in hauling water; a hint was taken from the hand-syringe, and aquapults and force-pumps came into use, and henceforth improvements were made in this direction, and progress on the line of the hand sprinkler and the sprinkling cart ceased. Different kinds of nozzles have been invented for the purpose of diffusing the spray, until we have now about all that can be desired in this device.

A lengthy writing would be required to mention, even briefly, the various features connected with the development of spraying as a horticultural practice in this country. As is well known, a great variety of pestiferous insects are now held in subjection by distributing upon the infected plants different kinds of liquid compounds by means of force-pumps and spraying apparatus. But the latest phase in spraying is its use for distribution of various kinds of chemical compounds for the prevention of the spread of many kinds of minute fungi which are destructive to various cultivated crops. Commencing the practice in this manner in vineyards to guard against the effects of mildews and rots, it has been extended to apple orchards to prevent the scab on the fruit, and it has also been employed with gratifying success on the growing crops of potatoes to save them from the rot. The spraying apparatus is now very generally employed by the best cultivators, and it would be difficult to find a fruit-grower, gardener or farmer who does not use or need it. Many have not yet adopted the new practices, but there is a great movement in that direction, and the era of spraying will move on, including more and more of our cultivators and develop greater knowledge of the practice and of the substances or compounds to be used both against insects and fungi. The Agricultural Department at Washington and the State Experiment Stations are experimenting

in all directions, and the means of fighting the insect and fungous foes of our cultivated crops will be fully made known for the first time in the history of the world. Arsenic, as found in Paris green and London purple, and kerosene oil forming an emulsion with soap, are the great insect destroying agents. As the season of the year is upon us when attention must be given to fighting insects and fungi, we desire our readers to take timely notice and make all necessary preparation for the work before them. Without now entering still more particularly into this subject, which from time to time has had consideration in these pages, we would call attention to those portions of the report of the meeting of the Western New York Horticultural Society, published in our March number, which have the most direct application in this connection. Especially we call attention to the reports of Erie, Monroe and Niagara counties, and the paper read by D. G. FAIRCHILD, of the Department of Vegetable Pathology at Washington.

Spraying apple trees with Paris green for the destruction of the larva of the codlin moth will require attention this month as soon as the blossoms have fallen. A second spraying after two or three weeks is considered necessary for the most effective results. One pound of Paris green to two hundred and fifty gallons of water is the proper proportion. When the mixture has been used stronger the foliage in some cases has been injured, and this should by all means be avoided. If the mixture is constantly stirred or agitated by a stirring apparatus deriving motion by a connection rod with the handle, or the piston rod, of the force pump, such as frequently is used, one pound of Paris green is enough for 300 or even 400 gallons of water. Some orchardists have found it an advantage to give one or more sprayings late in the season to destroy the later broods of insects; the early part of August and the early part of September are hatching seasons when considerable numbers of larvæ are produced, though never so numerous as in the springtime soon after the season of bloom. Great damage is sometimes done to the foliage of apple trees by a black aphid, *Aphis mali*, with the result that the young fruit is cast and the growth of the trees is

checked for the whole season, and enfeebled for the ensuing year. The apple grower should be on the watch for this pest, for if it comes and is allowed time to breed it increases with enormous rapidity; it sometimes happens that it does its worst before its presence is observed. This insect, like all the aphides, can be easily destroyed by spraying with a kerosene emulsion. The following method of preparing it is a good one: Dissolve one quarter of a pound of hard, brown soap in two quarts of hot water and add one pint of kerosene oil; stir until all the compounds are well mixed, and then add two gallons more of water, again stirring to mix the whole thoroughly. Throw this over the infested foliage with a fine sprayer.

Grape growers whose vineyards are invaded by mildews and rots, as they are in nearly all parts of the country, have had sufficient warning and sufficient instruction to enable them to make ample and timely preparations to prevent the spread of the minute fungi on the foliage of the vines which are the causes of those results known as brown rot, black rot and anthracnose. All of these troubles are present in some localities, and at least one of them is to be feared everywhere. Timely preparation to meet these destroying agencies is only the part of prudence, and neglect may be fatal. These remarks in regard to the materials used in spraying, and which are mostly of a general nature, are intended to keep before the minds of horticulturists the value of arsenious compounds and oil emulsions for the destruction of insects, and especially the value of spraying as a means of distributing not only these insecticides but others; so, also, the spraying of vines for mildew has led to this mode of applying copper solutions for the scab of apples, for the black knot of the plum, for the rot of potatoes and for other fungi-affected vegetation. Desired results have not followed the use of spraying in all cases, but progress is being made, and we have reason to expect most excellent results from its general use in the future when experiment shall have given more light to guide the practice; and the desired light is accumulating and being diffused through the press so that all may have the benefit of it.

OUR NATIVE PLANTS.

One of the most interesting of our spring blooming native plants is the Trillium. It is known commonly under the names Wake Robin and Birthroot. Its

also, is three-celled; no name could be more appropriate. One of the best known species of this genus is *T. grandiflorum*, and this is sometimes called the White



TRILLIUM GRANDIFLORUM.

Latin name applies to its peculiar structure, the number of its leaves, its sepals and its petals each being three, and its stamens six, or twice three, and the ovary,

Wood Lily. The plant grows about a foot in height, and consists of a single stem springing from a tuberous root-stock, and bearing near the top three leaves in a whorl, and above them a single nodding white flower. The leaves are from two to three inches, or more, in width, and from four to five inches in length, broadly ovate, and terminating in an acute point. The flower is large and showy, often measuring more than four

inches across. The illustration here presented of this plant is a faithful representation of it in all its parts and shows it about two-thirds of the natural size. The plant grows usually in the borders or edges of woods. In this region it frequently grows in company with another species, *T. erectum*, a plant of about the same height but with smaller leaves, and smaller, dark purple flower. Both of these species are widely distributed being found from the Atlantic coast to the Missouri valley and from our northern boundary to North Carolina, Tennessee and Kentucky; but *T. grandiflorum* is the more common, as it also is the handsomer.



A PECULIAR FORM OF TRILLIUM GRANDIFLORUM.

These plants submit well to garden culture and *T. grandiflorum* is well worth a place in the garden, although many might not consider the purple flowered species to have sufficient merit to give it a place. *Trillium grandiflorum* is subject to sporting, and it is probable that, by making a specialty of it and raising seedling and cross-fertilizing, one might in a very short time produce some valuable garden varieties. It is doubtful if a double variety of it might be desirable, but probably it could easily be produced, for the equilibrium of this species is, apparently, not very stable. The blooming time in this region is the month of May.

A peculiar form of *T. grandiflorum*, an engraving of which is here given, has for many years been under observation in different localities. The species here represented was found last May a few miles distant from this city. Mr. JOHN WALTON who found it made the following note in regard to it: "Petals have an ovate center of light yellow marbled with bright green on either of the midril; the outer margin is a clear pink with fine lines of deep rose running obliquely to the edge. The trio of leaves were much further than usual from the calyx, and instead of being sessile were set on pedicels about one and a half inches long."

A notice of this form of trillium was contributed to the Bulletin of the Torrey Botanical Club in 1870, by E. L. HANKENSON of Wayne County, N. Y., and in 1879, ERWIN F. SMITH, who is now connected with the Botanical Department of the Bureau of Agriculture, contributed a very full account of it as found in Michigan and which he "was inclined to think is rather widely distributed in Michigan." In 1875 this form was brought to the notice of Dr. GRAY and some notes on it were sent by him to the Bulletin of the Torrey Botanical Club, without, however, attaching any significance to it, as indicative of its value as a variety. Evidently the form is a degeneration from the typical *T. grandiflorum*, but the conditions causing it are not understood; if these were known we should probably understand the cause of its wide distribution.

There are eight other well recognized native species of trillium. Only one species of trillium is known outside of America and that is found in Japan.

Another most interesting spring-blooming wild plant of wide distribution is the well-known *Hepatica* or Liverleaf. In most modern botanical works it appears as *Hepatica triloba*, but the name given by LINNÆUS was *Anemone Hepatica* and the later observations of the characters of the plant leads to the restoration of the name and rank ascribed to it by LINNÆUS. It is really an *Anemone*. A little low-growing plant it is with its leaves raised but a few inches from the ground, or in the spring found lying close upon it, as

they have been pressed down by the winter snows; for its foliage is evergreen, the growth of the previous year remaining green through the winter and finally fading away only after the new growth has been formed in late spring or even in sum-

mer. The leaf is three-lobed and it is from this circumstance that its name is derived, and probably also because of the peculiar dark purple color of the underside of the leaf. The leaves spring directly from the ground and are borne on long peduncles. There are supposed to be two species, one being called *acutiloba* on ac-

count of the pointed lobes of the leaf, and with no other perceptible difference each plant bears a number of flowers which are white or light blue, sometimes with a pink tint. There is no real calyx but an involucre of three bracts just below the flower



ANEMONE HEPATICA, $\frac{3}{4}$ NATURAL SIZE.

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resembles a calyx. The parts of the corolla are variable in number. The flowers are borne singly on leaf-stalks three or four inches in height. One of the earliest plants to bloom—in this region from the first to the middle of April. A very desirable plant for garden culture, and one that assumes many variations.

AMONG THE RANCHERS.

I.

John Bailey, and his young wife, Marian, began their out-door life, and their farming and gardening experiences, in California. He had been a New York mechanic, who came to San Francisco on a five-year contract with a firm that gambled in mining stocks and soon failed in business. Marian Gay was a high school graduate, who had taught a little in country schools, and they were engaged and married in a few months after they first met. Then they tried living in rented rooms in San Francisco, until Mrs. Bailey declared that she would rather live like Thoreau, in the woods, than to have a whole six-story house without a side window. About this time wages began to fall, and work was slack in John Bailey's handicraft.

One night he came home with a story to tell: "Marian," he said, "old Timothy Center, who owns that row of houses I worked on last year, has land in every county in California. He owns a ranch in the Salinas Valley that he wants to rent on shares. I heard him tell an agent so. I used to work on a farm when I was a boy. Suppose we try it; if we can get ahead we can buy a farm of our own."

"Let's try it, John; I always believed you could run a ranch."

So, Mr. Center was talked with, and proved to be an honest, shrewd old Scotchman, who took a fancy to them from the start, and said that their little savings would be enough to carry them through, even if crops should fail "one year in five," which some ranchers had told John Bailey to expect.

"It is a lonely place," said he, "A poor house in a wide plain-like valley. But one good crop will enable you to buy a farm of your own; not mine, though, but another just as good."

"I don't understand that," said Bailey bluntly.

"This is the way: Land is cheap now, while the railroad stops at Chualar. Land is cheap and good renters are scarce. A crop of twenty sacks of wheat to the acre will clear you, on your share, ten dollars an acre. You can buy excellent land for twenty dollars, so that one good season

will enable you to get a farm half as large as mine, which is twice as much as you need. But I shall want you to handle my farm, too, as long as you do it well."

The Baileys went with mingled feelings of hope and fear. When they saw the moss-covered old shanty on the wind-swept, treeless level, miles from the hills, it seemed difficult to think of it as home. Mrs. Bailey at first looked with almost despair at the desolate land, gray and waste in the dull autumn weather. Then she rose to the emergency, as was her cheerful wont, and began to meditate upon plans to conquer the wilderness.

John Bailey was a born farmer; there was no doubt about it. He knew how to work and economize; he could manage men, and his every undertaking was calculated with the precision of machinery. Out in the open air, in the great hundred-acre fields of the thousand-acre farm, his mind broadened, and he felt a freedom he had never known in the city streets and on the workshop floors. Marian, too, caught the spirit of this out-door life; she worked harder than ever before, but she was stronger and happier. In such a mood they began ranch life in a California valley.

"John," said the busy wife one morning, with an air of sober resolve, "I must have a garden. It was always my faith that birds, flowers and streams were out in the country. Since we've come into a place where people say that nothing except wheat will grow let us prove otherwise."

"Well, I don't know what we can do," said John hopelessly. "I can't afford to fence in a garden this fall. Besides, our well is so deep that it will be hard work to water even a rose bush. But if you say so—"

"Of course I do," she answered. "Hurrah for the coming rose garden! When you come home to dinner I'll tell you where it shall be, and you shall give me a thousand dollars for two palm trees at the gate, such as those that Governor Stanford bought for Palo Alto last year."

Her husband smiled at her financial remark, rose from the breakfast table and

went off with his team. She did the "house work," then put on her neat little hat, which became her amazingly, and went out to "prospect" and explore until she found the wherewithal for her as yet imaginary garden, whose roses were only dream roses, mere ghosts of the future, waiting in chaos for her to find a spell to call them forth and give them reality. It was a tiresome, desolate sight that greeted the cheerful little woman's eyes. The house itself was only a rudely built shanty of weather-blackened redwood, with four-foot "shakes" on the roof instead of shingles. The deep well was covered with a few broken boards and rails to keep stray cattle from falling in. The shattered old barn and stable was open to every wind that blew, and about the half-eaten, last year's straw-stacks a dozen lean colts wandered with an air of hunger. Nothing else was anywhere visible, except that along the unfenced highway, a mile distant, faint dust clouds showed that stages, freight wagons and other vehicles were "on the road"; and, far west, near the river willows, she saw her husband's teams passing to and fro, dry-sowing the former tenant's summer-fallow.

Mrs. Bailey looked at the cloudless and dazzling sky for a singing bird, but in vain; robins, black birds, meadow larks, were all in the bushes and trees along the distant river. She walked around the house and searched fruitlessly for signs of any former garden. No shrub, nor vine, nor tree, had ever been planted in the dusty, trampled soil. Indeed, these wheat-farm renters, except when they leased for a long term of years, seldom planted anything permanent; seldom had even a geranium in a box by the door. They came to the ranch in a canvas-covered emigrant wagon, they expect to leave it in the same way. Their homes are barren of all beauty. The wheat field runs to the very door step, and after the harvest the cattle rub against the corners of the house.

Mrs. Bailey found a few broken boards near the old barn which seemed useless for any farm purpose. She carried them to the house and made a rude shelf beneath a window on the eastern side, sheltered from the prevailing winds.

"Now, if I had some boxes," she said to herself, "and some of the nice window

plants I've seen in San Francisco, these warped and splintered old boards would be just as good as patent tiles and cast-iron flower stands. I want a begonia or two, and most anything that will grow, whether it has flowers or not. I declare I am hungry for the sight of even an old fashioned marigold."

The next Sunday afternoon Marian showed her rude brown shelf to John and declared, with various pretty expressions and child-like eagerness, that she really must have some flowers, "if t'were only a portulaca box." Flowers, she said, were as great a human necessity as wheat fields or cattle, and her flower-stand was more essential to their happiness than that new barn he wanted to build.

John watched her every motion, and listened with delighted attention to her every word. It was a way he had; she was his comfort and inspiration, and everything she did or said went straight home to his heart. He knew little about flowers except the wild roses in the oak openings where he played in his childhood, but whatever Marian wanted he would try to get for her, and more than that, he would be interested in it all for her sake.

"John," said Marian, looking up suddenly, "why is it that most renters have things so forlorn and desolate; why do they go off and leave them so? And why can't the owners of the land see to it that renters have gardens, and so make life happier for them, and make them better farmers at last? You know Mr. Center told us that the last renter's wife and children were so homesick for the mountains that he thought that was one reason why they failed here. But in the five years he staid they might have moved a dozen cottonwoods from the river bottom and they would be quite large trees now. And the whole valley for twenty miles is neglected and gardenless."

"It all comes from the same thing," said John, flushing a little, in his slow way, as was his wont when he spoke with earnestness. "The trouble is that there are so many great ranches and non-resident landlords. This thousand acres of Center's is really a small farm for this part. Where a man owns ten or twelve square miles of wheat land, which he can rent as a whole, or in subdivisions, and live in

some town he has no pride in the appearance of the country; he doesn't want improved farms, with orchards and gardens, wind-mills and shade trees, lawns and orange groves. He only desires his regular half-yearly cash rent or his yearly third of the wheat. The real mistake was made long ago, when the United States conquered California. The government ought to have appraised, condemned and bought up all the old Spanish grants, so as to throw the whole of California open for pre-emption. The result has certainly been bad for the State. If you will let me parody Goldsmith—

"Oh, you may parody anything and everything, if it helps me to get my garden," cried eager Mrs. Bailey.

"Well, this applies to the discussion, at least—

'Ill fares the land to wandering ills a prey,
Where ranches grow and modern homes decay.'"

Marian clasped her hands, delighted. "That is precisely the sum and total. Really, John, who would have thought you knew so much about history and poetry, and political economy, and the way of a man with leagues of Spanish grants? But what are your 'wandering ills'? Of course they are the tramps; what else could they be? A very wild one came by yesterday, and I gave him some bread and butter. Then he asked for coffee and steak, but that was too much, and he had to wander off without it."

John laughed and then looked serious. He didn't like tramps, though he had helped many, and he could not bear to have his wife annoyed by them. Then he went back to the original subject: "But your garden; how much money will it take to begin with, and where will it end?"

"I only want what we can spare; not one cent more," she said. "You know how one of our first talks in the days just before we were married was to the effect that you should always let me know how our finances stood, and I promised that I would never run you into debt by any extravagance."

"Yes, we made a life partnership, and we've lived up to it faithfully ever since. But I have been thinking of your garden ideas, as well as about the farm. A shelf of boxes outside the house is not enough.

When I buy lumber for the new barn next week there will be enough waste to build you a neat garden fence about a little piece of ground at the end of the house, and if we spend five dollars for seeds and plants to start with this winter can you make that do?"

"Of course I can, and the result will make you open your eyes."

Mrs. Bailey was busy all her spare time that week and for many weeks after, sending for catalogues and studying their varied announcements. "John," she said, "there are too many kinds of plants in the world. Who could possibly choose aright without seeing them all in bloom? There are too many kinds of catalogues, too. At first I was greatly taken with the great flaring sort, that have pages on pages of 'novelties' that no one else knows anything about. But its 'borne in on me,' as old Aunt Hilda used to say, that that kind of loud, coarse, red-and-yellow catalogue comes from the slippery and dishonest seedsman."

"That is true, I think," replied her husband. "I once knew a printer who told me that the general rule was that long-established, substantial business houses print plain, dignified circulars and pamphlets. They use good ink, good paper, good illustrations, if any, and simple but artistic covers. They do not make flaming announcements in what my printer friend called 'shouting type.'" He spread out his wife's pile of catalogues and chose two which so aptly illustrated the difference that they both laughed. Then they took the modest catalogue, which bore on its cover the name of a famous American seedsman.

In the course of time Mrs. Bailey selected her orders. Half of her money was to be spent for seeds, half for plants, which a friend in San Francisco would choose and send to them. In the letter respecting the plants she wrote: "Six good roses, and all the rose cuttings you can manage to send me by mail. When I was a school girl I used to be able to make roses grow from 'slips,' and I hope I haven't forgotten the art."

John read her letters, and wondered in his foolish heart how any seedsman on earth could resist the temptation to send her ten dollar's worth, or how any nurseryman could keep from putting in an ex-

tra dozen or so of new roses; or how any San Francisco friend could help begging cuttings of every growable plant under the California skies. But all he said was: "Our garden is to have lots of roses."

"Yes," she said, "roses, sir, are delightful. One cannot have a garden without them; but I could be happy if I had roses alone, and not a petal of anything besides. Yes, indeed, we will plant and prune and water our roses, and Sundays

I'll put a rose bud in your coat. To use one of your big words, that you stole from Herbert Spencer, we shall differentiate this old 'renter's shanty' into the 'Bailey's Rose Cottage.'"

Then the seeds, plants and cuttings came; the tiny garden was fenced in, and spaded deeply, and the first autumn rains made it ready for planting. The flower seeds, however, were put away for the warmer weather, after the winter frosts.

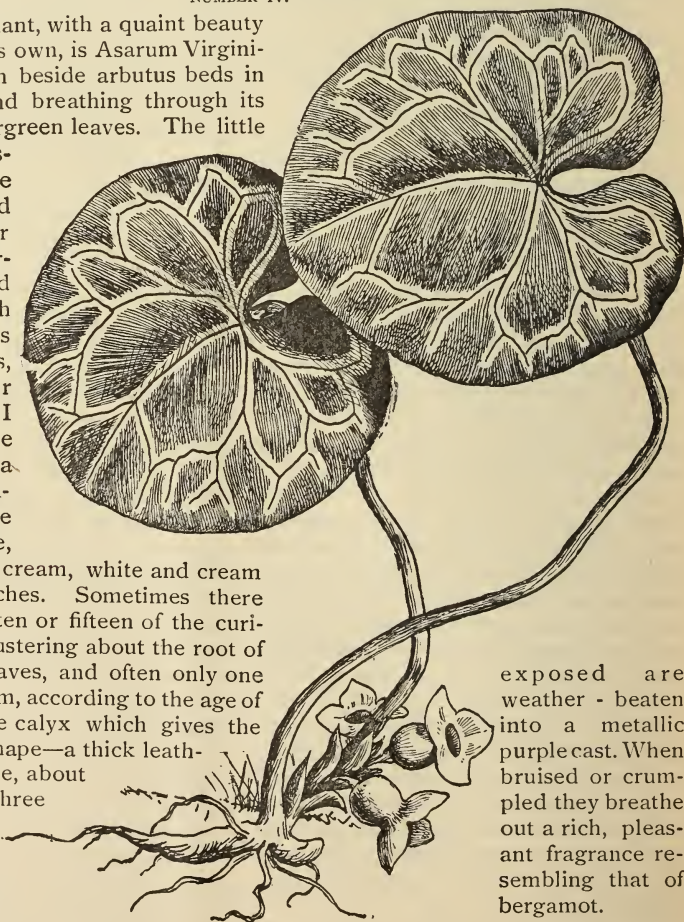
CHARLES HOWARD SHINN.

TO BE CONTINUED.

CAROLINA WILD FLOWERS.

NUMBER IV.

A curious little plant, with a quaint beauty and fragrance all its own, is *Asarum Virginicum*, nestling down beside arbutus beds in the cold woods, and breathing through its thick, leathery evergreen leaves. The little pitcher-shaped blossoms at the root are tucked in head and ears beneath their rough, warm coverlet of dry leaves, and are just now, March 5th, opening, for it is a late spring with us, although Easter comes so early. I found these little blossoms in half a dozen different colors yesterday. Pale lavender, chocolate, dark red, crimson, cream, white and cream with crimson blotches. Sometimes there was a big family—ten or fifteen of the curious little fellows clustering about the root of a large clump of leaves, and often only one leaf and one blossom, according to the age of the root. It is the calyx which gives the flower its curious shape—a thick leathery tubular envelope, about an inch long, with three short lobes for the top of the pitcher. There are six styles, 2-cleft, fleshy and diverging, each bearing a thick extrorse stigma. The leaves are quite as pretty as cyclamen leaves, which they much resemble; are curiously mottled with white, and where



exposed are weather-beaten into a metallic purple cast. When bruised or crumpled they breathe out a rich, pleasant fragrance resembling that of bergamot.

There are two other species of *asarum*, which bloom later, and have larger leaves, and blossoms two inches long, but the coloring is plain chocolate-purple, with closely con-

contracted throat and the three-cleft limb bending inward instead of out. The leaves are fragrant, but are plain green. An old black auntie with whom I sometimes study "yarbology" informed me that all the wild ginger (*asarum*) roots made splendid salves for bruises and swellings, being almost equal to *arnica*.

It is such a cold wet spring that many flowers are not yet out, but a month ago I found a parasitic relative of the *Monotropa*, *Schweinitzia odorata*, growing in sheltered nooks and coverts beneath the evergreen rosebays. It is a low, smooth, brownish plant three to four inches high, with the aspect of the *Monotropa*, except in having several flowers instead of one, and the point of the buds more acute—bell-shaped. There were brown scales for leaves along the flower stem, which was waxy, transparent wine color, lighting richly when held up between the eye and the sun. The five-lobed persistent corolla

was daintily shaded into white at the edges of the petals, and the little nodding flowers exhaled the odor of violets. This was a new acquaintance for me, found growing amidst *arbutus* mats, which are lazy this year and have not yet bloomed.

A pretty little plant, which brightens the woods in winter with its low-growing glossy scarlet leaves, is *Galax aphylla*, an evergreen herb with a thick matted tuft of scaly, creeping rootstocks beset with fibrous red roots, sending up these round heart-shaped crenate toothed and veiny shining leaves, which gleam in every shade from golden green to brown maroon. The leaf-stems are slender, graceful and wiry, all grown from the root, and from their midst, in April, spring bare, slender flower-scapes two feet high, bearing wand-like racemes of small, feathery, pure white flowers. It is a perfect little gem of the woods.

L. GREENLEE.

A WOMAN'S VINEYARD.

Must a woman make an excuse for having a vineyard? Is it not sufficient reason for taking upon herself the exhilarating pastime of out-door work that she adores nature and the fresh invigorating air? But in this case there is another reason, and perhaps many a woman who may read these lines has a like one which makes it more commendable to have a vineyard than to feel the want of it. Husband is wholly engaged in commercial pursuits, and although having pride in his suburban home, which has an acreage of some extent, he has no desire, taste or time for the care of its management. Sufficient help is employed, invariably accompanied with the remark, "my wife will show you what to do." Though his aim has been to procure skilled labor and understanding on their part, the help secured has fallen wide of the mark. Unbounded professions of wisdom have been made on the part of those applying for labor, but in its place has been displayed a stupid incapacity when put to the test. Consequently the writer of these lines has been willingly obliged to stir herself in order to be ably proficient for the successful management of the different branches of out-door work, a profi-

ciency gained largely from experience, and, I may add, from the reading of reliable works pertaining to the several cultural subjects.

A family vineyard, comprising perhaps one hundred vines or more, mostly of the Concord variety, some *Agawams*, *Brightons* and *Golden Pocklingtons* has given splendid returns, though yet young, and *Niagaras*, *Early Victor*, *Duchess* and some half dozen others, two years out, have not yet shown their quality. Although feeling that I have yet much to learn in the culture of grapes I am quite willing to impart that little knowledge I do possess for the benefit of those who know less than I do.

A gently sloping hillside facing south or east is very desirable for the cultivation of grapes, although the one of which I am the propelling power does not have either of these inclinations, but is content to flourish exceedingly well upon a piece of level ground; however, I found that care must be taken to thoroughly prepare the soil of a uniform texture and richness throughout, but not over rich. The ground should be pulverized to a depth of not less than twenty inches before planting, and planting should not be performed

during frost or when the ground is too wet; I think for this Northern locality spring the more desirable time for planting. The vines should be set about eight feet apart each way. Having made all necessary arrangements, the holes should be dug in which to plant the vines, and it is not best to prepare many at a time, as the ground dries out too quickly. The planting then begins. The vines are set about eight inches deep, a little slanting, earthing well up around the stem, and pressing the soil firmly around the roots. A year old vine will grow well although some might prefer older vines expecting returns sooner, but in this they would usually be disappointed. The first summer little can be done except to keep the soil mellow; the vines may be allowed to lie on the ground and grow as much as they will. A mulching of straw or grass is very desirable during drouth. In the fall a covering of straw and soil is necessary, or if straw is not convenient, a little fine brush placed over the vine with a light covering of soil will do just as well, and this practice may be continued every fall until the vines are at least five years old. Before the second season's growth begins a trellis must be prepared; for this posts of some durable timber are required, set in the ground to a suitable depth, with a height of not less than five feet above ground; wires are then stretched horizontally along these posts, about three being sufficient. At the beginning of the second season the young vines are uncovered, tied and trained upon the trellis. The new growth will produce the following year a taste of the luscious fruit. After

the third year in pruning I invariably cut away all old wood as close to the ground as possible, leaving two or three branches of new wood near the base of the vine for the bearing crop; these are securely but not bindingly tied in different directions upon the trellis. The cultivation of the soil is, of course, not forgotten, such as plowing between the vines in early spring, and hoeing around each vine separately *every season*. The time for summer pruning, if one wishes to try it, is when the fruit buds may be plainly seen. This is also the time for selecting, and allowing to grow, three or four desirable shoots near the base of the vine for the next year's fruit. In summer-pruning pinch off the new growths or laterals just beyond the last branch.

In a week or two afterwards the dormant buds will each have pushed out a lateral shoot opposite the young bunches, and these, also, will have to be pinched back to one leaf. After the first of June, or at farthest the middle of that month, there should be no more pruning of the vine; just await developments. Having never been bothered with any insect, other than the honey bee, nor any perceptible diseases of vine or foliage, the outcome of my experience has been a bountiful supply of grapes, which keep a long time and are to my family and self a source of keen delight. No greater vanity have I known than in the admiring enjoyment of my appreciative husband who enjoins upon a mutual friend the pleasure of testing the excellence of "my wife's grapes."

STATA B. HARTZ.

EMMELINE'S TOMATOES.

Emmeline Crane was a country girl, born and bred, and knew and loved every foot of meadow, pasture, orchard and woodland, in her father's farm. This, however, did not prevent her being persuaded to exchange her comfortable home in the country, for a tiny flat on the third floor of a block of similar flats, in the City of A —, where the companionship of one Edward Woodbury, and the privilege of writing "Mrs." before her name, was expected to compensate for any inconvenience she might experience, in being

thus "cribbed, cabined and confined" in so narrow a circumference.

It was in the month of October, 1889, that Emmeline became domiciled in No. 72, third floor, Bleecker Street, A —. The winter months passed pleasantly enough, for the novelty of city life, of which she had heretofore caught only fleeting glimpses, prevented her from contrasting her cramped quarters too forcibly with the large roomy farm-house that had sheltered her so many years.

But the first sunny days of March with

their hints of the coming spring turned Emmeline's thoughts countryward, and all at once the city streets with their brightly decked windows, their throngs of pleasure-seeking pedestrians and hurrying business men, their shiny carriages and satin coated horses, which at first had seemed so attractive, became distasteful to her. She longed to go tramping through the woods in search of the early hepatica, to smell the odor of the fresh-plowed earth, to listen for the note of the first robin, and to watch the misty veil of grayish brown, which covered tree and shrub, grow into a mantle of emerald.

Emmeline and her mother had for several years assumed the care of the vegetable garden. Each year, with the fall of the first spring rains they had taken the "pan of seeds" saved from the finest vegetables of the preceding year, had selected and discarded according to their own judgment, had searched the seed catalogues for new and choice varieties, and so in love were they with their work, and so successful in their undertakings, that Farmer Crane's vegetable garden was the envy and admiration of all the neighboring farmers.

"It's all the wimmen folks' doins," he would say when complimented on his fine vegetables. "I let 'em hev their own way, and only lend 'em the hired man a day, now and then. It does beat all though, what luck my Emmy has raisin things. Anything 'll grow for her, all she has to do is jest to put the seed in the ground and it's bound to grow. Look at them reddishes now, not a bug on em and everybody else's et up with 'em."

But these days were over for Emmeline, and she who had controlled an acre of ground, was now without so much as a square foot, in which she might claim ownership. No wonder then that the spirit of restlessness took possession of her as the days lengthened.

One morning after her little home was set in order, she took up the daily paper which her husband with "un-masculine" thoughtfulness always left for her. The first item on which her eye rested happened to be the following, under "Horticultural Notes": *"Tomatoes may be grown successfully in boxes, if freely watered and fertilized."*

Without looking to see whether the

"Fishery" dispute was settled, or the "Original Package" law enforced, she tossed the paper one side, and hurrying to her store-room proceeded to rummage in her boxes of old magazines, pamphlets, etc., for a seed catalogue which she thought might possibly be among them. After much tossing and tumbling, at the bottom of the last box she found what she was in search of. Returning in triumph to her sitting-room, she turned the pages eagerly until she came to "Tomatoes." There were all the well-known varieties,—the Trophy, General Grant, Acme, Paragon, etc.,—but alas, these all grew to such mammoth plants, that Emmeline knew they would soon become unmanageable in the space she meant to utilize for tomatoes.

"Oh dear," she sighed, "I never thought about economizing room for a plant before, I could never grow a plant *half* the size of the Trophy. Why don't someone invent a "dwarf" tomato I wonder? Well, I declare, if here isn't one as sure as my name is Cra—Woodbury," for in re-reading the list of varieties she saw what had at first escaped her notice, "Dwarf Champion, new. (For description see colored pages.)" The delicate pink-tinted pages devoted to "novelties" set forth the attractions of the "Dwarf Champion" in "couleur de rose." This tomato, it stated, was entirely distinct in habit of growth and foliage from any other sort. It was dwarf and compact in habit, the plant growing stiff and upright, with very thick and short-jointed stems. It would also bear very heavy manuring, the strength increasing the abundance and size of fruit instead of producing vines, as would be the case with other varieties. The fruit, the description stated, resembled the "Acme," and was always smooth, symmetrical and attractive in appearance, and as a "cropper" the plant was unsurpassed.

Emmeline went into her tiny kitchen, whose windows opening to the southeast admitted the sunshine three-fourths of the day. Raising one, she looked down on what was to be her "garden." Two feet below the window was a sort of hood, or wooden awning, built to protect the windows in the story below, making a ledge or shelf, thirty inches wide. This Emmeline proposed to utilize as a founda-

tion for her present "castle in Spain." Having satisfied herself that it would "do," her next step was to write a concise little order to her seedsman, enclose fifteen cents, seal, stamp, direct and drop it into the nearest post-box.

Then she waited? Oh no! You don't know Emmeline if you think she was one of the "Micawbers." She at once set about preparing a bed for her expected guests,—a hot bed at that. A box which had contained her curtain rollers was decided to be "just the thing" for this purpose. "Ten cents," the florist just round the corner told her, was ample remuneration for the filling, prepared as only a florist can prepare it, and five cents was the price a little street boy considered his services worth to carry it to No. 72. A few days later the postman left a tiny packet containing the expected seeds. Carefully selecting a dozen she buried them in the rich compost, pulled the glass coverlet over them, and left them to their own devices.

Not long did they remain hidden. Before Emmeline had thought it possible up popped nine little green caps, and so eager were the owners to make their way in the world that they stretched out this way and that until nine sturdy plants were drinking in the sunshine.

Edward had laughed at her for trying to raise tomato plants. "Why don't you have some geraniums if you want to grow something?" he had asked, and Emmeline had replied that "she didn't want geraniums, she wanted tomatoes."

The "hardening off" process was successful with seven, two having perished from untimely exposure to a belated March breeze that had suddenly chased away the warm smiles of April. Edward, who had regarded with much amusement Emmeline's "sky garden," as he had facetiously termed it, now began to feel an interest, and offered to assist in providing a permanent abiding place for the tomatoes.

After much "pro and con" discussion, in which Emmeline's "pros" out-weighed Edward's "cons," four butter-tubs, of two sizes, were obtained for a trifle at the corner grocer's. The smaller sized tubs were set inside the larger ones, holes having first been bored in the bottoms, and the space between filled with pack-

ing moss. On the bottom of the empty tubs was strewn a layer of broken crocks and charcoal, then the tubs were carefully deposited on the ledge outside the window. They were next filled with a rich loam, also obtained of the florist, who donated enough to fill the tubs, provided they would do their own carting. Edward smuggled this dirt in after dark in a market basket carefully covered from sight, being very much afraid that if the neighbors caught a glimpse of it they would think the inmates of 72 were but one remove from lunatics.

And now came the selection of plants, for only two were to be retained, and the "survival of the fittest," where all put forth equal claims, became a momentous question. Emmeline finally solved the problem by saying they would take two, and instead of throwing the rest away they could be expressed to her mother, who would have no difficulty in finding room for them. And so it was that one sunny May morning seven tomato plants set forth on a railroad journey, and two were comfortably settled in the tubs on the ledge.

One day when Edward came home to dinner Emmeline gravely informed him that she had named one of the tomatoes Castor and the other Pollux, and then followed daily bulletins concerning their welfare. "Castor had three blossoms and seven buds," "a tomato had really 'set' on Pollux, and Castor had really looked down-hearted about it," etc., etc. One would like to tell of all the bright and witty sayings those tomatoes called forth, but lack of space forbids. They grew like Mr. Finney's turnip, that Longfellow *didn't* write about; in fact, they seemed to appreciate the care and attention bestowed on them, and to be determined to do their "tomato best" to reward the bright, cheery face that beamed on them so frequently. At least, they profited by the careful training they received and "brought forth much fruit."

What a gala feast that was when the first ripe tomato appeared on their board! Even the golden apples of Hesperides could not have elicited warmer praise. Picked while yet the dew sparkled on the leaves, a delicacy of flavor was imparted to them which Edward was forced to acknowledge was as far removed in taste

from the ordinary grocery tomato as the north from the south.

But I must hasten to the sequel, which really reads like a fairy tale. Whether it was the extra care, the judicious watering and fertilizing, or the inherent virtues of the tomatoes themselves, true it is that Emmeline, in all her home gardening, had never gathered so many tomatoes from any two plants as she did from these. They grew in "clusters" almost, so thickly was the fruit crowded together on the stocky branches.

You must not suppose that Emmeline and Edward allowed these tomatoes to "waste all their sweetness" on themselves. Many were the tiny baskets, containing six or eight carefully selected tomatoes, with their own foliage deftly sandwiched among them, that found their way to the doors of those of their neighbors, to whom freshly gathered vegetables or fruit were unknown quantities.

"Mother says those tomatoes you sent her tasted the most like 'home' of anything she has tasted since she left the country twenty years ago," said the little lame dressmaker, who, on the fifth floor, was struggling to make both ends meet and care for an invalid parent at the same time.

An old Italian musician whom Emmeline had encountered on one of her tours of inspection, rapped gently at her door one evening, and handing her a tiny blue bowl, with a low bow, said: "Oh, mees,

you tink of de old man, and your thought take him back, far back, to his own lan'. When he eat de fine macaroni an' de tomat which you haf prepare he forget his exile an' his poverta, and tinka he once more in Italie."

And these were but two of the many grateful recipients of Emmeline's thoughtfulness, of whom, if space permitted, I might tell you. These tomatoes were, indeed, not "born to blush unseen," or to "hide their light under a bushel." The neighbors in the adjoining flats, whose windows commanded Emmeline's, noticed them, and decided to cultivate their owners acquaintance. "It's such an unusual thing, you know, to see anything of that kind growing outside a garden, that I am curious to know how it is done," they said.

"If I owned the Kohinoor I could not be more an object of envy," said Emmeline one day when she had shown her tomatoes to her seventh visitor. However, she was very willing to "impart her methods," which she did to a score of housewives, and the result is that they have all resolved to go and do likewise. Buttertubs are at a premium at the corner grocery, orders for no less than forty having been left there, and by the end of July, 1891, the rear of the Avon flats may be expected to glow with ruddy tomatoes of the "Dwarf Champion" variety, and all because a little woman from the country was homesick for a garden. E. F. W.

AMATEUR HYBRIDIZING.

PART II.

The approach of the season for seed sowing, and a letter from over the border, have reminded me of my half promise made to you last October, to say a little more regarding this delightful pastime. Having told you then the best time, tools and how to use them, let us now turn our attention to some of the deeper mysteries, more particularly double flowers.

Fairly good and certain results may be expected from crossing single flowers, but with double flowers or attempting to produce double flowers we meet with difficulties that require a little study and observation and which cannot be wholly overcome. But to those who have gone

thus far the difficulties and uncertainties only add zest to the pursuit.

Let us begin at the bottom and see what a double flower is, how it differs from the single flower of the same species, and how it came to be thus different. The single flower consists usually of four distinct parts. In mentioning these parts let it be understood that they will be spoken of as they usually are, for no fixed rule of arrangement or description will apply. The parts are in their order from the stem, 1st, the calyx or outer envelope; 2d, the corolla or inner envelope; 3d, the stamens; 4th, the pistils. The corolla consisting of a single row of leaves or a single whole

leaf surrounding the stamens and pistils. In the double flower however we find the corolla to consist of more than a single row or single leaf, there being two or more rows or leaves. But this is not the only difference, for a close inspection shows that the double flower has less stamens and in very double flowers the stamens are wholly lacking and such flowers of course bear no seed, unless they chance to get pollen from outside sources. So we find that such flowers have sacrificed usefulness to beauty; the stamens have changed to petals or corolla leaves. And we find that such a change is usually made at the expense, to a certain extent, of the hardiness, vigor of growth, and freedom of bloom. The plant can no longer "bear seed after its kind" and so is, in Dame Nature's view, useless.

Just how or why this change takes place is one of nature's secrets, but we can see it taking place if we will. I remember that in mother's old garden stood a single purple columbine. As the years passed on it became double, growing more and more so until the last time I saw it it was a marvel of doubleness but would bear but little seed. It had been undergoing the change for nearly twenty years and had been moved four or five times. Care and cultivation usually brings about such results. By looking closely at such changing flowers we will often find stamens partly transformed, having the anther borne on a stem which is partly a leaf or has a tiny leaf attached to it. We may sometimes find this in flowers still single

and then we are fortunate, provided we are prepared to take advantage of it. For the pollen from such stamens is naturally more likely to give us double flowers. Pollen taken from such a flower, even if the flower is not desirable, will give us, when used to fertilize the pistil of a single flower of good color and habit, a good percentage of double flowers of good markings and growth. We can also secure fair results by taking pollen from a single flower and with it fertilizing a double flower.

Hybridizers can take some lessons from stock breeders. For instance, if we wish to secure any one quality without especial regard to others be sure that both parent plants have it in perfection and continue this through several generations, carefully selecting the best plants to work from with each generation. Thus working we may reasonably expect to secure hardiness, fragrance, substance, form or any other quality. On the other hand, if we cross a hardy free-blooming variety with a delicate, shy bloomer of choice form or color, we must not expect the product to stand severe winters unprotected, but we may expect that it will stand some degree of frost, that the form or color will be better than the one parent, and the vigor and freedom of bloom better than the other. And we must not forget, that, oftener than we really care to, we may expect failure. For in this work nature has yet many things hidden for us to bring to light.

D. M. F., *Marquette, Mich.*

OUR PATRIOT DEAD.

Bring ye sweet flowers to deck their lowly graves;
The noble ones, who shed their blood so free,—
And fighting, fell in freedom's cause, that we
Should hold it sacred, while the old flag waves!
Bring flowers! the fairest, sweetest, for our braves;
Roses and lilies—'twas for you and me
They died! Cover each mound that they may see

The living love that still their strong heart craves.
O sainted dead! O husband, brother, friend,
Known or unknown; we hold thy memory green,
And scatter o'er thy resting place, the rose,
The lily, pansy, violet, to blend
Their perfume with the tears that oft, unseen,
Bedew the ground 'neath which our loved repose.

LILA N. CUSHMAN, *East Boston, Mass.*



FOREIGN NOTES.

TUBEROUS-ROOTED BEGONIAS.

These will now be on the move; fresh potting should therefore be seen to as soon as possible. For my own part I prefer to see the new growth commencing before this operation is performed. Avoid using pots at all out of proportion to the size of the bulbs. This is a mistake which may lead to bad results. I would rather give a shift later on in any needful case than allow the tubers to be surrounded with too much soil at the start. The old soil should be carefully removed as closely as possible. This in itself will afford more room for the fresh. The bulbs should be kept fairly well down, so as to protect the surface roots as far as can be done. Turfy loam and leaf-mold in about equal parts, with plenty of sand, will grow them well. Watering must be done very cautiously until the plants are growing freely. A gentle heat will assist them, but on no account should too much excitement to rapid growth be allowed. The object to be aimed at is to obtain a dwarf stocky plant at the outset. Shelves will suit them very well—in such positions they will not be likely to get overwatered—or a pit where they are near the glass. Seedlings of this year should now be all pricked off; any which have been thus treated may have the same operation repeated before they are potted up. These will do better in rather more warmth than the older bulbs. Where any disposition has been observed in past seasons towards a pendulous style of growth, advantage should be taken of such tubers for basket culture, for which purpose some are peculiarly adapted.

H. G. in *The Garden*.

VALLOTA PURPUREA.

If this bulbous plant stands in need of fresh potting, this will be found a good time to see to it. When in a good state of health I prefer to let the plants stand over unless a larger pot is needed, but if at all sour or otherwise unhealthy at the root, it is better to shake out entirely and pot in fresh soil. In doing this, many of

the offsets can be taken away for working up a younger stock. It is always a good plan to have at least a few plants coming on; these should be started in rather small pots, three-inch in most instances being quite large enough. Rather light, fibrous loam and about one-third of its bulk in good leaf-mold with plenty of sand will suit this lily well. After potting, a rather warmer place might be given the plants for a few weeks, or they could be accommodated upon a shelf, in which position I have found them to do well.

J. HUDSON in *The Garden*.

FLOWERS FROM LEAVES.

M. CASIMIR DE CANDOLLE has lately studied several cases of so-called epiphyllous inflorescences, in which the flowers are borne on the upper or lower surface of the leaf. The explanation usually given of such cases is that there has been an adhesion, or more strictly, a want of separation, between the flower stalk and the adjacent leaf—that the two have, in consequence, grown together. But from the relative position of the stipules, when present, as well as from the anatomical structure, M. DE CANDOLLE concludes that the inflorescences in question are real outgrowths from the leaf and not axillary shoots concrescent with the leaf. These cases, with other considerations advanced by M. DE CANDOLLE, show once more that the distinction between stem and leaf, or caulome and phyllome, is purely arbitrary.—*Gardeners' Chronicle*.

NEW ZEALAND APPLES.

A lot of New Zealand apples offered in the London market, April 3, brought the extraordinary price of fifteen to twenty-five shillings, equal to \$3.75 to \$6.25, per bushel case. The *Lyttelton Times*, of New Zealand, February 23, says that about 400 cases of this season's apples had already been sent to England, that being the beginning of a large exportation. Every apple is wiped dry and clean, and packed in a separate paper bag before being put in the case.

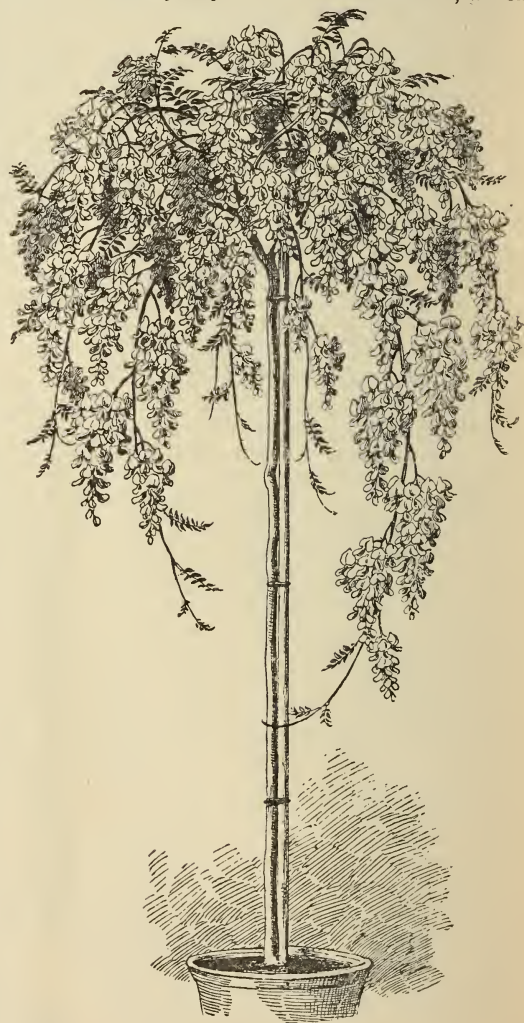
THE WISTARIA AS A POT PLANT.

A new subject for winter forcing has been brought out by German gardeners. This is the well known and popular climbing plant, Chinese wistaria, *W. sinensis*. A specimen was exhibited last spring in Berlin, from which the annexed illustration was made. It was published with a description by Möller's *Deutsche Gärtner-Zeitung*. For conservatory decoration it cannot fail to be very effective, and it is easy to see that it could be used to great advantage on many occasions. The specimen here figured had seventy panicles of bloom—the whole head being a mass of flowers. To raise a plant select a strong young plant in the spring and pot it in well enriched fibry loam in a good sized pot, and keep it growing steadily through the summer, allowing it to rest in autumn. By mid-winter cut back all the shoots but the strongest and start again into growth. Tie up erect the remaining shoot and guard it carefully that it be not broken. At the end of the second season the stem should be several feet in height. Before starting for the third year's growth cut the stem back to a convenient height, say four or five feet. The head, consisting of several branches, will now begin to form, and the fifth year it can be brought into bloom. The branches and young shoots can be allowed to hang naturally, drooping all about the stem. If properly managed a plant will remain in good condition, blooming annually, for many years. Forcing is quite easy, as only a moderate temperature is required. If kept in too much heat the buds will drop.

HOTEIA JAPONICA GRANDIFLORA

This is a decided improvement on the typical form, and it appears to force equally well. Plants now coming into flower have fine panicles of bloom, the individual flowers being much larger than those of the type; they are also closer together, thus forming dense masses of feathery

white. The variegated variety (*reticulata*) somewhat resembles this improved variety, but the plant is not so vigorous and the flower-spikes are smaller. When *grandiflora* becomes well known it will entirely supersede the older form, which



WISTARIA SINENSIS.

has long been one of the most popular of all plants for early spring flowering.

F. H. in *The Garden*.

A SWEET-SCENTED BEGONIA.

It is announced that Messrs. LEMOINE of Nancy, France, will send out this season Begonia Baumannii from Bolivia. The flowers are rose colored and with a rose scent.

PLEASANT GOSSIP.

PRAIRIE GARDEN NOTES.

II.

There is no lack of small fruit indigenous in the prairie country and it is easy to have it close at home. We have on our own farm varieties of plums which furnish a succession of fruit from July or early August until November frosts destroy every green thing. There can be no better place for a plum thicket than in a hog lot; it is to be supposed that the hogs in rubbing against the trees dislodge the curculio, at least the fact is that the cleanest and best fruit is found in several such around here, and seldom fails of a crop, seeming to prefer the dry seasons. Last year in spite of the excessive drought the crop was abundant. Plum trees do well as a hedge. As yet I have failed to get a crop from trees in the orchard more than one year in five. A hedge of native gooseberries has never yet failed to give me a crop of fruit. The pruning is done by cutting out some of the larger limbs at picking time, when I carry them to the shade and pick my gooseberries comfortably. It is a singular fact that small and sour as they are, the wild fruit is preferred by many to the tame, perhaps it is in being accustomed to it. I am myself conscious of a preference for the native black raspberry, which is, however, in nowise an inferior fruit under cultivation, and which has had the added merit of giving me some berries in the fall three seasons at least since I have grown them. These berries I noticed last year were on entirely new canes; the old ones, that is, those of the previous years growth, were killed out largely by the drouth just at the time of the ripening of the berries, and they had set a large crop, and I have wondered if there were not in this fact a suggestion of a means of obtaining a second crop, under good cultivation of course, which, I am sorry to say, mine have not had. A few years ago I grew the Gregg and Souhegan also, but they died out for some reason, perhaps not hardy enough, and as I thought the native fruit the better I have not replaced them. The wild

strawberry abounds here in every shape and phase of deliciousness, but to be the darling of our hearts it is, wild it must be always. I wonder why?

The wild grape makes excellent marmalade jelly and wine; the jelly we think much better and infinitely handsomer than that made from Concord or a nameless white grape I have which absolutely refuses to be made into any solid form whatever. I would not advise transplanting the wild grape unless one possesses good botanical knowledge of the sexes of vines. I have some barren vines near the house, however, these planted themselves, there was no labor lost.

Numbers of the Russian mulberry have been sold in this section of country, but it is safe to say no one who could have had the opportunity of comparing the mature tree and fruit with the native species would have invested a cent of money or a moment of time on them. They may be of use in feeding silkworms, as to their value for that I cannot say.

There seems to be no species of blackberry indigenous to this section of country, but a little distance to the south and southwest the black currant flourishes abundantly as the gooseberry does here. I am told by those who live there conflicting tales with regard to these berries, some affirming that they are the exact counterpart of the black currant of cultivation which they saw in my garden, while others say the berry is different in flavor. I have not seen them but think there are different varieties and one belonging to the gooseberry section of *Ribes*. My informants say they do not taste like gooseberries however. S. E.

FLOWER SEEDS IN VERMONT.

From experience I have learned that although the second week in May is the average time to sow flower seeds in the open ground, it will scarcely do in this latitude. The cold damp nights, the chilling long-continued winds, and pouring rains, sure to arrive the latter part of May, make the putting in of seeds (ex-

cepting some kinds that are a long time germinating) very impracticable. True, my seeds mostly came up, sowed the 6th and 12th of May, but they had a way of damping off or drying up not cheerful. I sowed but few, as an experiment, however, and those sowed the 20th came up readily. I can heartily recommend phosphate as an assistant in raising flowers. It lifts the plants along at an opportune time, and makes the roots as well as stalks stronger and better able to bear transplanting. But I recommend the method of putting in seeds where the plants are to bloom, especially in this latitude. It costs a little more in extensive grounds to sow and uproot the plants that stand too thickly, but I believe it pays, if one wants flowers. One dollar more will cover the expense of much waste, and if you have children in the vicinity that will make an effort to have a bed of their own, by supplying them with your surplus plants there need be little waste, and this will be doing a good deed in a naughty world. I gave a highly of a little girl some plants and she cared for them tenderly; they grew to be the joy of her heart, and if she lives she will yet sober down and will cultivate flowers.

Let us all shun the evil of withholding even the smallest good from anyone, simply because we do not want others to have what we have. I knew a woman once that pulled up flowers because a hated neighbor had some like them; and a bank cashier who pulled up the poppies that grew in his garden and on his lawn, because a neighbor expressed the great admiration of himself and wife for poppies.

I believe the happiest people are those who give with joy all that falls to their lot to dispense. I succeeded admirably last spring with my cobceas. I folded them in a moistened flannel placed edgewise in a teacup and kept in a warm place. The best pansies I grew I sowed the middle of May in the ground under an apple tree, covered over with light brush.

Mrs. H.

CYCLAMEN—FREESIAS.

I have been a subscriber for the MAGAZINE since the first number was published, and you may suspect I have made such a pet of it I cannot patiently see it appear to be in the wrong, so I wish to call your attention to what might lead many to make a wrong pronounciation of the word cyc-la-men. Putting two

letters, cy, in the first syllable would lead to the idea that it should be pronounced "sz," which is not correct. It is "sic," with the accent on the first syllable. See Webster's Dictionary.

There was an article in the MAGAZINE on the culture of the freesia that is so contrary to my experience that I feel I must tell of my success. I purchased bulbs of the freesia when they were first advertised as "novelties," therefore expensive, so I was anxious to succeed with them. As they were Cape of Good Hope bulbs I reasoned that they must be kept dry after they died down. I wanted the little bulbets to have a good chance to grow all they would, so this is what I did: After potting I kept the soil in the pot *damp* by watering from the saucer, (as if the rainy season had come). The shoots very soon appeared, and I kept the pot on the sunny side of a west window, where it was cool but not freezing. I kept the soil damp, but not extra wet; when the leaves began to fall down I put in two sticks, a foot or more in length, and tied green yarn around, leaving the leaves free between the yarn. The blossoms were nice, but not so fine as I have had since. I pinched off the blooming branches, relying on the bulbets for increase instead of trying to mature the seed; after the plants were through blooming, and the leaves began to turn yellow, I set them out of the sun, but where they had plenty of light, and watered them just enough to keep them from wilting. When all the leaves had ripened and turned yellow and dry I pinched them off. The soil was allowed to dry and afterwards kept dry. In August I emptied out the dry soil, put the largest bulbs an inch apart in a four-inch pot, and between the bulbs planted the largest bulbets. I watered them, and in a few days they were growing nicely, but I fancied I could do better than I had done; I put considerable leaf-mold in the pots, set them in a room that was heated from a coal stove in the room adjoining, put them where they got but very little sun, and that in the morning, fertilized them the same as my other plants, and I was so satisfied that I have continued the same treatment and the same location, drying off as the leaves ripened, and now this past winter I have had the leaves two feet high, the blossom stems with five branches to a bulb, no spray with less than four blossoms, and more of them eight, ten, and several with twelve blossoms and buds on a spray. I had them in blossom the first week in January, and the last I picked last week, March 20. I did not water all the pots at first, but I found by experiment if I left them too long they lost their vitality and did not do so well as those I started, as I imagined, about the time the damp weather would start them to growing in their own country. No one need want finer blossoms of freesia, or more of them, than I have had the past winter. My pots are all out of the window, setting back on the bench in the light now, and as fast as a leaf dies I pick it off, and when the leaves are all dead I shall dry them off as heretofore.

MRS. K. L.

Our correspondent has obtained good results in cultivating freesias, and appears not to have been satisfied with first attempts, but tried new methods, and improved with experience. We regret that there is now a conviction, apparently, that no further improvement can be made. Perhaps the mode alluded to as so contrary to the one here discussed, and which was given on page 58 of the present vol-

ume, may be in advance of the drying off method; at any rate it is worth testing.

As to the pronunciation mentioned, there is quite as good, if not better, reason and authority for cy-cla-men as cyc-lamen (sick-la-men); and the mental image produced by the latter pronunciation is anything but pleasing. Common usage with English-speaking people among both gardeners and botanists favors cy-clamen.

CALIFORNIA LETTER.

A letter from California, from the well-known botanist and collector, W. F. PARRISH, under date of March 24, among other matters, tells of the state of vegetation there at that time, and also comments upon the suspicion with which Eastern people regard the statements of Californians. We have no doubt of his consent in making use of the portion of his letter which here follows:

SAN BENARDINO, March 24, 1891.

DEAR SIR:

We are here, now, in the midst of spring; the callas are blossoming by the hundreds; the plains are fairly ablaze with the glowing California poppies; sweet alyssum fills the air with its perfume, as do the little yellow balls of the acacia trees; verbenas and geraniums, of course, are filling their branches with blossoms; and the roses are waking from their short winter's sleep. I should not dare tell you how high the thermometer registers, for fear you should think I was telling you a Californian fiction. Why is it you Eastern people so often seem to think what we Californians tell you is all false? We are of the same blood as you are, most of us are of your own people's transplanting. Has the transplanting into new and rich soil made such a rank growth that truth is entirely hidden in us, while you only still keep it in its purity? I frequently met, while at the East, the too apparent smile of incredulity, which courtesy could not conceal, when making some statement about our State which seems to us as natural as to say that the sun shines and the grass grows. But just because my eastern friend could not comprehend it he smiles a bland and skeptical smile. I had no intention of writing anything of this kind, but you see California has thrown its glamor over me as of old. I am now once more a good Californian, and

Yours respectfully, W. A. PARRISH.

Two days later brought the following letter, and when it was opened the perfume of acacia was sweet and delicious from the few blooms it contained. We can assure our entertaining correspondent that we of the Eastern States are ready to believe almost anything about California, as it and the other Pacific coast countries of the United States, have proved to be the wonderland of America.

"I have noticed how persistently some flowers continue to come up year after year from chance-sown seeds. Especially the verbenas and geraniums, and of

course petunias and sweet alyssum; sweet peas, and for one or two seasons, pansies. Smilax also sows itself freely in favorable positions, seeming to prefer a partial shade. Oxalis spreads somewhat slower, but continues to propagate itself in various out-of-the-way places. The cosmos, which here grows five or six feet high, with correspondingly vigorous branches, promises to become a pest—its seedlings are coming up thick all over the garden. In our neighborhood, where the ground is very moist, the pampas grass grows from the seed freely, and is a troublesome weed.

And now I am going to tell what you of the "effete East", will no doubt consider a "Californian yarn," that fifteen miles away can be seen great flame-colored patches of *Eschscholtzia Californica*, acres of it growing on the mesa at the mouth of the Cajon Pass. "Don't believe it!" I think I hear a chorus of readers exclaim, and I answer I don't care two straws whether you believe it or not. There are a great many things you may not believe that are true. I can easily imagine some doubting Thomas standing in the garden where the acacia tree fills the air with fragrance wondering why we Californians will use so much perfume, "so different from what we do in Boston, you know." I show him the streaks of flame on the hillsides and tell him they are fifteen miles away and he blandly replies "ah, yes, I've heard of you Californians painting the town red; I suppose now you have got beyond that and have taken to painting the country red."

What I have stated is absolutely true, and as easy for us to believe as for a New Englander to believe in a snow storm. As I write the room is full of the perfume of a spray of acacia. I would like to waft you and your readers a breath of it."

SCOTCH BROOM.

The Scotch broom mentioned in your last number is no doubt the common furze of Great Britain (*Ulex Europæus*). It is also called gorse. It is cultivated to make fox covers; where the *varmint* are preserved, burrow and breed, to keep up a supply for the grand old English sport of fox hunting. It blooms all the year round as the adage tells;

"When furze is out of blossom
Kissing is out of fashion."

BRITISHER.

HARDY GLADIOLUS.

Is the Lemoine gladiolus hardy enough to endure our northern winters in the open ground? I have a hardy species locally known as "Sword Lily," about three feet high, having a slender scape bearing about a dozen flowers, which are light crimson inside and out, except for the narrow white stripes on the lower petal. What is the name of this species, and are there other varieties of it? If so, where can they be procured?

E. S. G.

The gladiolus described is probably *G. Byzantinus*. This and *G. communis* are hardy. The latter has a small violet-colored flower. There is, also, a variety of it with white flowers. *G. Colvillii* is sometimes called hardy, but in our region re-

quires protection with leaves or litter. As these varieties are not particularly desirable, it would be difficult, or perhaps impossible, to find the bulbs of them in the hands of dealers in this country; but they can be procured of European bulb-growers. The real hardness of what are called the Lemoine varieties is not well known, as no good tests have yet been made, or, at least, none have been published. They are not considered, however, to be more than half-hardy in this climate. Perhaps at Washington, or further South, they might pass the winter without protection.

COPPER CARBONATE.

In the Western N. Y. Horticultural Society proceedings of 1891 recently published, page 85, Prof. SAUNDERS in his talks about copper mixtures said, that it was as easy to make carbonate of copper as to make a cup of tea. In an off-hand manner I will confirm Prof. SAUNDERS' assertion. Some boiling water, please; thanks. Notice I put into this cup a few crystals of sulphate of copper. Now I pour into it some hot water, stirring, the quicker to dissolve the crystals. Here is some carbonate of soda, dry. By putting into the solution a pinch at a time (see it makes quite a fizz like soda water) it changes the liquid to a green color and gradually there is formed a precipitate which is carbonate of copper. To facilitate the operation it is better to stir a little with a stick, until it has ceased effervescing, showing that sufficient soda has been added. Now I fill the cup with hot water, letting it stand a short time and soon the copper settles. Now I drain off all the water possible—I repeat the operation once or twice more—the object being to wash the substance and free it from sulphate of soda. Now we have the carbonate of copper in the moist state and it only needs to be put into a saucer and drying at a moderate heat and we have the dry powder.

In order to obtain the article in larger quantities for making ammoniated copper for spraying purposes take six pounds of purified sulphate of copper, pulverize till the pieces are no larger than beans, put this into a cask, say half-barrel size, pouring in sufficient boiling water to dissolve it, and stir with a stick. Put into a tin

milk pail or other convenient vessel, four pounds carbonate of soda, add two or three dippers of hot water, stir, and let it settle a few seconds. Then pour the solution gradually into the cask, add more water to the soda if it is not all dissolved and proceed as before. Be careful how you stir the mixture at this time, as it is very sensitive and may foam over the top of the cask. After effervescence ceases, fill the cask with hot water, if it is as convenient to have as cold, and stir well. When the precipitate has settled drain off the water by tilting the cask. Repeat the washing once or twice with cold water if you like. Dry the precipitate by putting it into a shallow yellow crockery baking dish or Scotch bowl (iron), place in stove oven on a couple of bricks, with open door so as not to dry too rapidly. If copper carbonate is made with sal soda double the quantity of soda will be required, eight pounds to six of copper sulphate. It is not so dense a precipitate and the process takes more time.

In the same "Proceedings," page 81 D. G. FAIRCHILD gives this formula: 3 ounces copper carbonate to 1 quart of aqua ammonia of 20 per cent. strength for spraying, to be diluted with 22 gallons of water.

The wholesale price for purified copper sulphate is over 20 cents, chemically pure over 30 cents, common under 10 cents. The last I do not consider profitable to use, as in a recent experiment less than 60 per cent. of it was soluble in ammonia. It might answer for lime mixtures.

OLD EXPERIMENTER.

TOMATOES IN BARRELS.

Here, on the Dakota prairies, we find some trouble in raising tomatoes, vines, etc., on account of high, hot winds and dry weather. Last year some neighbors, or rather a neighbor, raised tomatoes in this way: Old barrels were placed where water could be thrown into them conveniently. A good supply of manure was put in the bottom of the barrels and good soil on top of that, filling them within one-third of the top. In this soil tomato plants were set, three plants in each barrel (there were only two barrels). The sides of the barrels protected the plants from the winds; water was thrown on them as needed. The plants grew and thrived wonderfully, overtopping the bar-

rels, which after a time were rolled under the partial protection of some small trees. It is needless to say that the plants bore well. If they had not I probably should not have written about them. Three bushels of tomatoes were picked from the vines in those two barrels. Surely the yield more than paid for the time and labor expended, for last fall tomatoes sold at the rate of eight cents per pound.

I have been thinking a good deal about this method of raising tomatoes. I cannot see why this same plan can not be adopted in raising the delicious strawberry-tomato, or ground cherry. We have no native fruit here. Probably there are others who live in just such places, and any way to raise anything in the fruit line is hailed with joy.

If one did not have the barrels, I should think holes could be dug in the ground, as deep as the depth of a barrel, manure put in, and soil above that, then seeds sown or plants set. This method would be virtually the same as the one first given. We mean to test its efficacy the coming season, and I would be glad if some one else might be helped with the same idea.

It is said that a heavy mulch around cucumber vines is a great help in a dry season. Indeed, I think it would always be a help here, for the seasons are never so wet as to cause damping off or rotting.

ROSE SEELYE MILLER.

DOWNY MILDEW OF THE GRAPE.

The latest publication of the Department of Agriculture, Farmers' Bulletin No. 4, advises the use of ammoniacal copper carbonate solution for spraying vines to prevent the downy mildew and the brown and gray rot. The formula is as follows: In an ordinary water pail dissolve 5 ounces of copper carbonate in 3 pints of aqua ammonia, having a strength of 26°. If 3 pints of ammonia are not sufficient to completely dissolve the copper, add enough to bring about this result. When completely dissolved pour the solution into a barrel and fill the latter with water.

About the time the leaves are one-third grown spray the foliage with the above mixture, and repeat every two weeks until near the time the fruit begins to ripen. A force pump of some kind with hose and

suitable spraying nozzles are necessary for the effectual application of the liquid.

The copper carbonate can be made at home for about one-third the price usually charged for it. Following are directions for manufacturing it as taken from the Bulletin :

In a tub or barrel dissolve six pounds of copper sulphate in hot water. In another suitable vessel dissolve seven pounds of sal soda in hot water. When the two solutions are cool, pour the second slowly into the first, and then add water until the tub or half barrel is full. Stir the solution thoroughly and let it stand for twenty-four hours, then siphon off the clear liquid and add fresh water. Stir again, and again allow the solution to stand twenty-four hours; siphon off the clear liquid as before, then remove and dry the sediment, which is carbonate of copper. Using the above quantities of copper sulphate and sal soda there will be formed three pounds of copper carbonate. Sal soda sells at wholesale for 1½ cents per pound, so that on this basis the necessary chemicals to make three pounds of copper carbonate will cost 46½ cents, or 15½ cents for one pound. The usual wholesale price for this chemical is 40 cents per pound.

In a recent conversation with Dr. S. A. LATTIMORE, the well-known chemist connected with the Rochester University, the writer was assured that there is no simpler or more economical method of making copper carbonate than that proposed by the Department of Agriculture and given above. Of course it will be necessary to obtain copper sulphate of as good quality as possible. It is sometimes accidentally adulterated with zinc and iron, and such adulteration, to the extent of it, detracts from its value.

BUCKWHEAT BLOOM.

One of our readers suggests raising buckwheat as a flowering plant. We have known buckwheat flowers on some occasions to be used in making up bouquets and other flower pieces, and always with good effect; but at the same time we think there are other plants that are more appropriate. In an emergency we should not hesitate to employ buckwheat bloom, and, in fact, be very thankful to get it.

COLUMBIAN EXPOSITION.

The work of preparation at Chicago for the great exhibition is said to be steadily progressing. The finances for the prosecution of the work are reported to be in a satisfactory state. Designs are already in hand for many of the buildings, and from present appearances the exposition is destined to be one of the largest the world has ever seen. One of the most remarkable structures on the grounds is to be a tower higher than the celebrated Eiffel tower at Paris. The external appearance of this tower is shown by the engraving on this page. The tower is to be 1150 feet high at the base of the flag-staff which is 150 feet higher than the Eiffel tower. It will be known as the Proctor tower, bearing the name of the designer. The lower portion of the structure will be built of railroad iron and concrete, and the superstructure, which will be manufactured at the Carnegie Iron Works at Pittsburgh, will be entirely of steel. It will be shipped in sections ready to be fitted together on arrival at the grounds. The design has been endorsed by some of the most eminent engineers of the world. The following description is from *The Graphic of Chicago*:

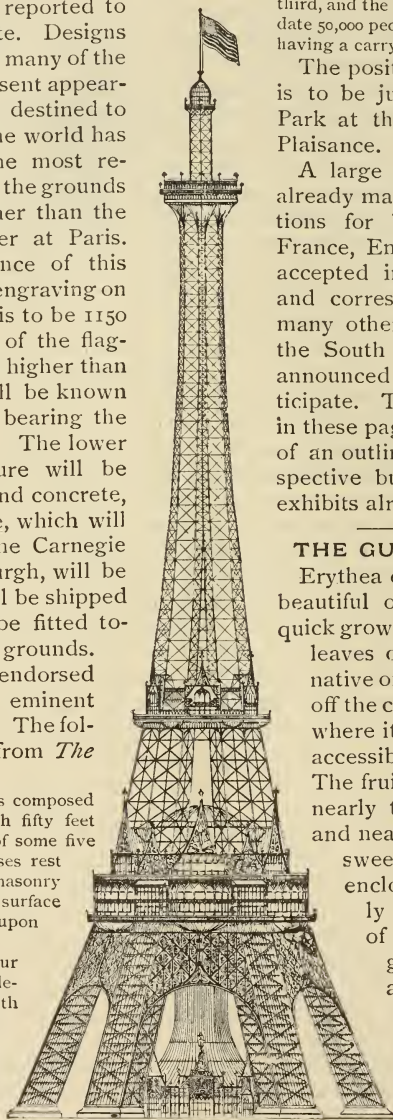
The bottom of this tower is composed of six substantial bases each fifty feet square enclosing a surface of some five acres in extent. These bases rest upon a foundation of stone masonry sunk seventeen feet below the surface of the ground and resting upon hard clay.

A central space, some four hundred feet square, will be elegantly floored and walled with marble, and within it will be located the huge engines operating the elevators and dynamos, the ground space at the sides being taken up with booths, refectories and the like. The elevators, which will move a central shaft, will ascend from the base to a distance of a thousand feet in two minutes time. These elevators, ten in number, will be constructed and guarded in such a manner that accident will be impossible. Four of the cars will ascend to the second landing, and two will make the journey to the dome, one hundred and fifty feet from the top. At this point an observatory will be located, containing telescopes, and, it is not unlikely, an exhibit of the signal service of the United States.

The second landing will cover an area of 6,400 feet, and booths, restaurants and the like will be located here for the refreshment of those who desire to view the city from an altitude of 400 feet. The area of the first landing exceeds the total area of the second and third, and the three together will accommodate 50,000 people at one time, the elevators having a carrying capacity of 8,000 per hour.

The position of the Proctor tower is to be just outside of Jackson Park at the head of the Midway Plaisance.

A large number of States have already made handsome appropriations for buildings and exhibits. France, England and Spain have accepted invitations to take part and correspondence is open with many other countries. Several of the South American States have announced their intentions to participate. The space at command in these pages will not admit even of an outline account of the prospective buildings and the varied exhibits already announced.



THE PROCTOR TOWER.

THE GUADALOUPE PALM.

Erythea edulis is one of the most beautiful of ornamental palms, a quick grower, with large fan-shaped leaves of a dark green. It is a native of the Isle of Guadeloupe, off the coast of Lower California, where it is found in almost inaccessible cañons near the sea. The fruit is jet black when ripe, nearly two inches in diameter and nearly round. The pulp is sweet and pleasant eating and encloses a large and extremely hard seed about the size of a marble. The wild goats eat the fruit with avidity. Occasionally men visit the island to kill goats for their hides, and when they run out of provisions—as they sometimes do, as the island can only be

approached in good weather—goat meat and palm fruit or “wild dates” as they are called, comprise their only food. The blue palm (*Erythea armata*) with its beautiful silvery or glaucous white foliage, is a near relative of the Guadeloupe palm, and is found in the cañons bordering the desert on the mainland. C. R. ORCUTT.

DOUBLE PYRETHRUMS.

Some time since a colored plate of single varieties of hybrid pyrethrums appeared in the *MAGAZINE*, showing how beautiful are these flowers produced by cross-fertilizing different species, such as *P. roseum*, *P. cinerariifolium*, *P. frutescens* and others. In this issue a plate of double varieties is offered, showing what can be raised from seeds cross-fertilized as above mentioned. Seedlings from the best seed will, of course, give flowers of every degree, some even single, some slightly double, and occasionally a plant with the best of double flowers. When a really good flower is obtained the plant can be propagated by division of the roots. These pyrethrums do best in the open ground. Seed sowed this month in a bed of fine soil will soon germinate and afterwards the young plants can be pricked out and set where they can remain and receive good culture. A little protection with dry leaves should be given for the winter in cold climates. The plants will bloom the second year, and are perennial.

LONGEVITY OF ANNUAL PLANTS.

How long will annuals grow and bloom in the house? For instance, a Tom Thumb *tropeolum*, raised from seed planted a month ago, is making a beautiful bush. If kept through the summer on a window-ledge would it continue through the winter if taken into the house? M. F. C.

The only answer that can be given to this question is that if the plant is kept in the best conditions suited to it, it will continue to bloom until its vitality is exhausted—that may be by the close of autumn or it may not be until some months later. Something will depend even upon the individual plant. Two plants raised from the same stock of seeds and treated precisely alike would undoubtedly vary to some extent; if they were equally vigorous, and one had a more free blooming habit than the other the former would probably be the shorter lived.

NATURAL SCIENCE CAMP.

It is a pleasure to announce that the Natural Science Camp of Western New York, on Canandaigua Lake, near Canandaigua, N. Y., which was instituted last year was successfully conducted, and the second season of the Camp will begin on the 6th of next July and continue until August 3.

The Natural Science Camp offers an

opportunity to boys to enjoy the delights of camping by the lakeside without any of the discomforts and dangers that commonly surround a party of boy campers. Carefully selected instructors will conduct field classes in various branches of science, explain the habits and structure, and direct attention to the peculiarities and beauties of the various specimens which they collect; and will look after their physical training.

A Girls' Camp will be instituted this season, beginning August 3 and closing August 17. ALBERT L. AREY of this city is the director. Professor AREY has associated with him eighteen able assistants, and the young people of this region have offered them a rare opportunity for pleasant, entertaining and at the same time instructive, vacation exercise.

PAMPAS GRASS AT THE NORTH.

I read somewhere that an empty barrel, or the like, turned over a clump of pampas grass would be a sufficient protection in the North. If not, how much, or what, is required? Would it do well in a tub which could be wintered in the cellar? Will some one who has had experience reply? E. S. G.

ARBOR DAY.

Arbor Day in this State occurs on May 8th this year. It is expected that the day will be very generally observed, especially in the public schools. Perhaps when its observance shall have gained the hearts of the children the next generation of adults will continue it. It ought to be observed by all, old and young. So much has already been published on the various ways the day might be profitably observed that we do not wish at this time to mention the details of the subject. It is sufficient to say that the prominent object is to direct attention to the usefulness and beauty of trees and induce an increased interest in them and in plants and vegetation of all kinds. And to this end there might, on Arbor Day, be gatherings of neighborhoods, of town's people, of clubs and granges as well as of schools, all to be entertained with proper exercises.

The Department of Public Instruction of this State have issued a circular giving instruction for the observance of the day by the schools.

The schools on Arbor Day are expected to take another vote for a State flower. The vote taken last year gave the majority for the Golden Rod, but the competition between this plant and the Rose was so close it has been thought best to take the vote again restricting the choice to these two plants.

VEGETABLES IN SUPPLY.

One of the common mistakes of the amateur's vegetable garden is the lack of a continuous supply in sufficient variety. It is too apt to be the case that there is only one vegetable in season at a time and that for a short time. There is a planting made of beans, for instance, another of peas, another of corn, and that one planting ends it, so far as that vegetable is concerned. To be sure, later in the season there are other vegetables that continue for a long time, but after all there is often a lack of that plentiful variety which is as grateful to the taste as it is healthful. This poor condition of things is most easily remedied by the little attention and care necessary to make new plantings about every ten days until the middle of June. After that time the weather becomes too warm for the healthy growth of peas, and if the late varieties of sweet corn are put in at that season they will be in use about the time of early frosts. By selecting the proper varieties of lettuce and making successive sowings there should be a constant supply through the season, whereas in most gardens it is only a spring luxury. The use of lettuce salads, appetizing and healthful, warrant the attention necessary to have it in good condition from April to December at least--the early and latest crops being given the protection of a cold-frame.

THE OLD APPLE TREE.

Here's the old apple tree, where in boyhood I sported,
When my heart was as light as the blossoms it bore;
Where my old maiden aunt by the parson was courted,
In her prim cap and gown such as ladies then wore.

On this rude oaken bench, 'neath bending boughs seated,
While the wild bee was humming its song in the tree,
There we children oft-times by our elders were treated
To share with their gossip some cakes and weak tea.

Look! here are the names of the many now sleeping,
Of dear parents and kindred long gone to the tomb;
The old apple tree, like a true friend, is heaping
The oak bench they sat on with beauty and bloom.

In the glad days of spring, when the spirit rejoices,
When the old apple tree looks as gay as a bride,
I could dream that I heard every one of the voices
Of the friends who sat here on the bench at my side.

Every rudely carved name has a story to tell me—
And that true-lover's knot, I remember it well;
It was carved on the day when my first grief befel me,
The day of my parting from sweet Isabel.

Oh! the old apple tree, where in boyhood I sported,
And the rude oaken bench, they are still in their place;
But the dear household faces whose welcome I courted,
They have vanished and left me the last in the race.

H. COYLE.

HEPATICÆ.

Do you know the first blossom that wakes in the wood?

'Ere the snow is quite gone from the valleys
Hepatica lifts up a little green hood,
Her cold-numbed forces she rallies,
All quickly she throws off her blanket of snow,
Awakes her green leaves from their slumber,
And while the chill breezes yet drearily blow
She sends out her bloom without number.

Her blossoms reflect all the tints of the dawn—
All the pinks and the blues, pale and pearly;
She ne'er stoops to tie the green hoods they have on,
But starts them all out bright and early.
Like bits of bright sea shells they're scattered about,
Or scraps of a broken up morning—
Like merry-faced children, all bravely they're out,
Dull skies and cold weather quite scorning.

And so, when the blue-bird's note rings through the grove,

Or the phœbe-bird calls in the morning,
Be sure that the brave little blossoms you love,
Are some dainty wood nook adorning.
From a cushion of three-parted, dark, mottled leaves,
On delicate furry stems springing,
The shy little blossoms, one gladly perceives,
A message of brighter days bringing.

DART FAIRTHORNE.



OUR YOUNG PEOPLE.

FLOSSIE'S STORY.

Flossie was enjoying a visit from Cousin Bertha. This cousin was timid and very nervous. She had once been a pupil in a large school building that was wrecked by a cyclone. Her extreme nervousness had dated from that time. Every storm of rain and wind made her sick with terror. An aunt of Flossie's, on another street, had invited them to take tea with her. Here Bertha recounted her fears and tremors, as had become her habit of doing, until it was apparent that her health was suffering thereby. Suddenly she exclaimed:

"You haven't told me yet, Flossie, about the awful storm you had here. I don't see how you can keep from talking about it."

"I do; you're nervous enough now without hearing any more of such things," said the wise Flossie; "not a breath of night-wind can blow but you are up in bed listening, and punching me awake."

"Then I'll get your auntie to tell me about it," and she looked askance at that lady.

Auntie meditated a moment and said: "Flossie, dear, if you can tell the story of our experience 'that night' just as you told it to your Uncle Rob, perhaps Bertha may find that there is a way of looking at such things that helps to fortify one against excessive fear and apprehension;" and she gave her niece a significant look.

"Oh, my; oh, my!" began Flossie, "I can only tell you a little of how it was; you can never know its awfulness unless you'd been here yourself. You see there's no big river here, no mill-dam, no big hills for water to drain down from, no anything to make a flood. But there's a 'wet-weather creek' so much below the level of the town that it carries off all surplus water. So nobody ever feared that kind of trouble here.

"Besides, the oldest citizens had said that we should never have a cyclone either, because the old-fashioned tornadoes were always to one side or the other

of this locality. So, when I heard of the great destruction by cyclones elsewhere, I was still not the least afraid of any storm that threatened us, until finally a genuine cyclone came so near that from auntie's glass door there, could be seen the hospital roof, over at the Orphans' Home, sailing off in a cloud of dust.

"Now, that was very near to us, you see; and I told grandmamma I thought it might very easily have come nearer, and she thought so too. She said that people often get so careless and self-sufficient, that they have to be reminded of a Higher Power sometimes.

"Well, not long after that there was a cyclone on the *other* side of us that destroyed buildings, bridges, orchards and everything in its way. So then I thought there must be something that turned the courses of great storms out of our way, sure enough; and I began to feel very safe again, and told grandmamma so. But she only shook her head and said—'Everybody is safe, wherever they are, if they are Christians and do what is right.' 'Do you believe that, Flossie?' asked Bertha.

"*Believe it?* of course I believe it; else what would be the use of having any religion?"

"Well, a few months after that I was staying here with auntie one night because she was to be alone. We were not at all afraid, for there were a lady and daughter on one side of us, and a sick child on the other whose family had to sit up with it. The father was absent and so there was no man in our row of three houses.

"Well, about sun-down the clouds rose from all around the horizon; a heavy rain set in with constant lightning but no thunder. After dark the lightning flashed continually and the sky looked so grand that auntie stood at the glass door all the time. At last she said the rain and lightning were increasing steadily and that she had never seen anything to equal it before.

"By half past nine the rain still poured in torrents and the lightning was so constant that auntie called it an electricity storm."

"Electrical storm, my dear," corrected auntie.

"Oh, yes; how awkwardly I do talk!"

"Not at all, dearie, you are doing nicely."

"When auntie thought I looked tired she said we might better go upstairs to bed, for I must be bright for my lessons in the morning. But I noticed that she did not undress — only put on a wrapper and lay down by me. But the rain beat so hard on the windows and piazza roof that I could not sleep a wink.

Shortly the wind began to blow fiercely, and as it was impossible to sleep we went downstairs again. Presently auntie put on a gossamer and stepped out on the piazza. By the lightning flashes she could see that the rain shot off from the eaves in unbroken sheets of water.

"Well, about eleven o'clock the rain really slackened, and we were both so tired that auntie said we'd go to bed then, for sure. I think I had just dropped to sleep when an awful, splitting, crashing thunder clap aroused me. Before I knew it I was sitting up in bed. Auntie drew me down so gently and told me so softly that I really must shut my peepers and go to sleep that I did try. But I could not sleep. The thunder seemed to have opened fresh rain clouds; for the rain poured in heavier torrents than before. I felt afraid, and crept into auntie's arms. Then I asked her what she thought when she heard that awful clap. She said: "I thought only this — The Lord rules and reigns; He will take care of us."

"That made me feel safer, until I remembered I had forgotten to say my prayer; a very poor time, I thought, to forget it. So I slipped softly out of bed and said it on my knees; and I added some to it out of my own thoughts. When I was snuggled in auntie's arms again I asked her if our own thoughts and wishes are of any account in prayers.

"I can't tell all her answers now, but the most comforting thing she said was, that our Heavenly Father likes us to talk with Him in our hearts whenever we will and wherever we may be. That made Him seem near to me then, and I was not

afraid of the storm after that. But, Bertha, just as I was really going to sleep again there was a furious ringing of fire bells.

"Auntie sprang up and said she would dress again and not think of sleeping on such a night as that, telling me I might dress too. When I asked her how there could be a fire in such a pouring rain, she said:

"I'll tell you, dear. That thunder clap indicated that the lightning struck near by — probably the tall church on the next street," (and so it had) 'and very likely the interior is on fire where the rain does not reach it.'

"Just then the ringing ceased; but in five minutes it began again. It seemed that the needed help must be slow in turning out because of the storm. But, oh, Bertha, it was not a fire at all. In another minute the court-house bell and all the church bells were ringing in addition to the fire bells. Auntie turned pale and said — 'O, darling, somebody is in great trouble; I wonder what it can be!'

"We hurried down stairs and when auntie threw open the hall door we heard a voice on the street calling above the storm — 'Get up, everybody; help! help!' And in the lightning flashes we could see men running and every moment there were more of them.

"Then auntie said — 'This is unbearable; I *must* know what is the matter.' Then wrapping her gossamer around her she told me to stay right there while she went out for a minute. Then I thought of her words and I said — 'Whatever it is, auntie, *God rules and reigns.*' She smiled a little then, and kissed me and hurried out.

"She soon returned, saying that she found the women on either side of us as ignorant as herself; but that on the crossing at D — street she had seen a black crowd of people moving in the light of a bonfire — yes, Bertha, a bonfire in an overturned tar barrel. The rain could not quench it.

"While auntie was looking, other men came in sight on the run pulling a wagon from which a long boat projected. Then she came in and said she would take me out with her far enough to learn something more definite. The rain and wind had slackened some, and we soon reached

D—— street, where we were amazed to see, just below, a roaring, rushing river, deep and wide, crossing it, filling the ravine and covering all the space between us and the far-off station.

"Trees, timbers, furniture and parts of houses came rushing past; but worst of all, right there, lodged against the nearest end of the railway bridge, was a house tilted over, with seven grown people in it, besides two children of a neighbor who had run in during the evening and were storm-staid. We could see the man, Mr. F——, at a corner window tilted above the water, watching all that was going on.

"A plucky young man tied one end of a long rope about his body and jumped into the flood; but the raging current carried him off so swiftly he had to be pulled out. Then the brave fellow went up stream and tried it again. But the strong current, and the heavy stuff rushing with it, bore him past the house before he could reach it. He threw up his arms and was quickly pulled out, but at first seemed to be dead.

"Another brave man was ready, and with the same rope tied about himself went far up stream hoping to work his way far enough across to strike the house when he should float down that far. And, Bertha, he did. But auntie said the rushing timbers and everything would crush him and she couldn't stay to see such fearful sights unless she were doing some good."

"Flossie, tell me this minute where that water came from?" exclaimed Bertha.

"That's what I heard auntie ask that night. She said: '*Where* does all this water come from?' and some man answered: 'The Lord only knows.' And, Bertha, I heard a man say: 'Well, I never believed in Noah's flood till now.' So you see a little good was done any way."

"Were the people in that house saved?" queried Bertha.

"Yes, indeed; auntie engaged a boy to bring her word about everything, and from him we learned that the brave swimmer was pulled into the window by Mr. F——, more dead than alive. His end of the rope was then made fast, while the other end was being tied to a telegraph pole on 'shore' (what a strange word to

use for a street). Then the boat was launched, and by means of the rope stretched across to hold by, the men managed to save all in the house. In five minutes after the last trip was made the roof fell in and the house went to pieces.

"Over near the station was a house bottom upward lodged against another bridge. A man, his wife and two boys were in it. One boy was found next day lodged in a floating tree-top, the others were drowned.

"A boat that was sent to rescue people lower down stream found a woman and idiot son almost drowning in their little home. The crowded boat would hold but one more and she was urged to save her own life, which was of some value, while her son's was not; but she would not leave him and both were drowned.

"Still lower down in the town the loss of life was fearful before their danger was known elsewhere. You see, Bertha, we had the same freshet that other people in sections about us were having, but we had a flood besides, that came rolling upon us with a front of from three to four feet high. This was proved by the water-lines the next day on the inside walls of dwellings that withstood the pressure. One woman told auntie that she saw water coming under her door and opened it, when a bank of water higher than her knees rolled in. She caught up a child and sprang upon a window sill and hung there by the sash while the water rose to her arm-pits in a few seconds. She was rescued by a boat.

"This flood was twenty or thirty minutes in sweeping through the town, making its way to the river, along which its passage was timed and telegraphed by us all the way to the city of C——. The telegrams all began: 'A flood struck us' — giving the time."

"Flossie, aren't you going to tell me where that water came from?"

"Yes, it came from a cloud-burst northeast of us. So, you see that if we miss certain things that we should very much dread, we may suffer from something else that we'd never thought of. And, Bertha, it's not the least use to worry, as I told Uncle Rob, who has suffered from a cyclone out West and isn't a Christian either. I told him that I say my prayer at bedtime and go right to sleep in peace.

"When I got back to grandmamma I just laid my head in her lap and told her that I'd been feeling too safe from dangers, and that after this I should believe that there's no *true* safety anywhere except in our trust in God. And grand-

mamma said she felt so too. And now, Bertha, if you will learn to feel like this you'll never be so easily frightened again; but can go to bed and sleep all night as content as a kitten.

MARIA BARRETT BUTLER.

WHAT LUCY DID WITH HER FIVE-CENT PIECES.

It was during one of the dreariest of January thaws that two young girls stood on the threshold of a shabby cottage in the outskirts of a thriving city. The slow, drizzling rain pelted down on the dirty snow-drifts banking the broken fence, and the raw east wind whirling around the corner, scattered the rustling, brown leaves and shook the blanched stalks of the last year's dead weeds in the front yard.

The faces of the girls were as gloomy as the weather, and, almost as damp, too, for the traces of tears were plainly visible on cheeks which, until very recently, had been unaccustomed to such visitors. Ellice and Lucy Shaw were the daughters of a wealthy merchant whose failure in business and subsequent death had left his family nearly destitute.

All that remained to them was this tiny cottage. Its forlorn condition, within and without, was not calculated to elevate their depressed spirits as they stood viewing it that damp, gray day.

"It is a shame for us to live in such a place!" exclaimed Ellice, drawing down the corners of her pretty, red lips. "There's Uncle Joshua, rolling in wealth—a childless, old widower and mamma's only relative—he ought to help *her* at least!"

"I'd rather take care of her myself!" exclaimed Lucy, with a flash of independence. "Of course it'd be very nice if he'd show some regard for us, though, seeing we're alone."

"Yes, and he spends hundreds of dollars on that hobby of his—*horticulture*! I dare say he's still angry at us girls for running over his flower beds when we were wee tots visiting there. Dear me, Lucy! don't you remember how unconcernedly we picked his precious tulips? Just as though they were only common dandelions and they were choicest bulbs from Holland! How he glared at us!"

Lucy laughed. "Yes, I remember," she said. "But in spite of his being such an ogre, I loved to go to his place. His garden was like fairy-land! I do love flowers! I wonder if we can't have a posy bed here?"

Her sister took a survey of the small plot, its muddy surface diversified by ghostly weeds, old rubbers, battered tin cans, a rusty hoop-skirt and broken crockery. Evidently the former tenants of the cottage hadn't cared for beauty or neatness.

"We'd better call this *Rat-Hole* or *Poverty-Flat*!" she exclaimed contemptuously.

"No," said Lucy quietly, as she reached up to fasten a vine that was trailing its ragged length over the rickety railing. "We can call it '*Wistaria Cottage*'! This is a genuine wistaria and a very strong, sturdy vine in spite of its struggles with adversity. Let us profit by its example and do the best we can, never giving up. So, Ellice, dear, don't look so blue. We can make a charming little home before this year ends."

"It'll take money to buy seeds and plants," despondently.

"Not so very much. Old nurse has promised me slips from all her plants and as for seeds, well, I'll manage to get them somehow. I'll—oh, yes, I'll *save up my five-cent pieces*—I heard of a girl who used to do that to buy *bonbons* with, and surely flowers are of more account than candy."

Lucy carried out this new resolution, and, little by little, the box on her bureau became filled with a pile of dingy silver five-cent pieces. And when the March winds began to blow away the clouds from the sky, she sent for her seeds to get them in time for use.

And when it grew warmer she made a vigorous attack on the rubbish in the yard. Ten-year-old Tom, her brother,

helped her, and soon the small plot presented a neat appearance — smoothly spaded, raked and laid out in regular beds. Ellice, who taught in one of the public schools, could not be of much assistance, but as the work progressed, she, too, became so interested, that all her spare time was spent in doing something in the garden.

The honest, healthful work helped the girls far more than they realized. They grew strong, rosy and happy. Mother Nature is such a warm-hearted old dame that she gives comfort to all who seek her. Who can feel 'blue' or hopeless when at work out in the mellow sunshine and sweet, pure air, with the birds singing around one and a million of tiny, green things up-springing to light, life and beauty, mute teachers of faith, hope and glad fruition.

When midsummer came, it began to be noticed that the luxurious carriages of the city people driving out, began to go very slowly as they passed *Wistaria Cottage*—it was such a bright spot in that squalid neighborhood. The vine, rejoicing in the care bestowed on it, flourished wondrously, covering the weather-beaten walls with green and purple embroidery. And the little sixty by forty front yard looked like a glowing mosaic, for not a square foot of it but had its display of blossoms. Gay verbenas, bright-faced phlox, pansies, fragrant mignonette and a host of other favorites.

"Lucy," Tom cried, running in one day, "Lucy, there was a fellow leaned over the fence this morning when you were at the market, and he wanted to buy a bouquet. I thought you wouldn't care, so I picked some of the flowers and charged him fifty cents — here's the money!"

"Why, Tom!" his sister exclaimed, quite astonished at this display of business talent on the part of her little brother. And then and there, there came into her mind, an idea that she was not slow to carry into execution.

"Ellice, maybe we can *sell* some of our flowers!"

"Make button-hole bouquets an' I can sell 'em down at the depot," Tom chimed in. "The excursion folks 'll be crazy for 'em!"

So, until J. Frost, Esquire, came around

with his nipping fingers, Lucy was busy making fragrant nosegays, big and little, and the fine ladies from the city began to discover that at "that little brown cottage out in the suburbs, you know, they have the most charming flowers! Delicious sweet peas!"

And one October day, Lucy sat counting her gains. "Let me see," she said, reflectively, "I saved up forty-three five-cent pieces—that makes two dollars and fifteen cents. Then I paid a dollar for manure, seventy-five cents to the man for spading, and a dollar for bulbs. Four dollars and ninety cents in all. And here," turning over the bills and coins in her lap, "here I have forty-eight dollars—a profit of forty-three dollars and ten cents. Pretty good, I must say!"

"And the best of it all is," remarked the gentle-faced, invalid mother, looking up with a smile, "the best of it all is, that our little garden-plot has been a missionary in this vicinity, for I notice that most of the neighbors are beginning to tidy up their yards, and I'm almost sure there isn't as much quarreling and profanity as there used to be."

"And here's something more," said Ellice, coming in with a letter. "Our garden-plot has even conquered the family ogre!"

And she read the following lines from Uncle Joshua:

"MY DEAR NIECES:

I dare say you'll be surprised at hearing from such an old curmudgeon as I am, especially after my seeming neglect. But the fact is, I supposed you two girls hadn't a mind above beaux and bonnets. But since I have seen how bravely you have made the best of things and the wonders you have accomplished with that wretched place of yours, I am convinced that there is considerable grit in you. I always supposed that I had the finest pansies this side of heaven, but yours have surprised me—they are superior to mine! And when things get to such a pass I am sure that I need your help, so, suppose you come and live with me? I'll do my best to make you and your mother comfortable and happy. You can plant and pick flowers to your heart's content and more than that shall have all the profits,

YOUR UNCLE JOSHUA."

MARY E. BUSH.

EDITOR'S MISCELLANY.

MUSHROOMS—HOW TO GROW THEM. A practical Treatise on Mushroom Culture for Profit and Pleasure. Illustrated. By William Falconer. 12mo. pp. 172. Cloth. Orange Judd Co., New York.

The author has devoted many years to the practical cultivation of mushrooms, both here and abroad, and few persons have had so many opportunities as he of studying the various phases of this subject. The book is written in simple and forcible language. Every direction, from preparing the bed, planting the spawn, and gathering the mushrooms, on a small or large scale, down to their culinary preparation are so fully and clearly treated that any person who never saw mushrooms even could follow these directions with *immediate* success. Not only is this book replete with information of value to those who grow mushrooms for their own table only, but it also contains full information for growing the plant for market. The publishers of this Magazine are prepared to supply orders for this book at the regular retail price, \$1.50, for which sum it will be sent by mail anywhere, prepaid.

THE COLUMBIAN CYCLOPEDIA.

The *Columbian Cyclopaedia* is the new name and form of what has heretofore been known as *Alden's Manifold Cyclopaedia*, and which has won great popularity by its high merit, combined with its amazingly low price.

The *Columbian Cyclopaedia* will comprise 32 volumes, of about 800 pages each (the *Manifold* was 40 vols., of 640 pages each), being about equal in size to *Appleton's Cyclopaedia*, and about 50 per cent. larger than *Johnson's*. The entire set will contain about 7,000 illustrations; it is very handsomely printed and bound, and, like the *Manifold*, is almost fabulously cheap, the entire set being furnished in cloth binding for \$25.00, with easy installment terms to those who want them. Of course, subscriptions to the *Manifold* will be completed in uniform style with the early volumes delivered.

Whoever is interested in cyclopedias will do well to secure (free) specimen pages of the *Columbian*, which may be had by addressing The *Columbian Publishing Co.*, 393 Pearl St., New York, or 242 Wabash Ave., Chicago.

Having the *Manifold* as far as already published for constant reference we are able to speak in the highest terms of its comprehensive character and its accuracy. Both as a cyclopaedia and a dictionary it proves highly satisfactory.

PUBLICATIONS RECEIVED.

Annual Reports of the Fruit Growers' Association and Entomological Society of Ontario, 1890.

Proceedings of the Western New York Horticultural Society, 1891.

Proceedings of the New Jersey State Horticultural Society, December, 1890.

Annual Report of the Board of State Viticultural Commissioners, for 1889-90. A very full account of the present condition of the vineyard industries of California. This report will be sent to anyone desiring it by applying to the "Board" as above, at 317 Pine St., San Francisco, California, and sending seven cents for postage.

Culture of the Sugar Beet, by H. W. Wiley. Farmers' Bulletin No. 3. From the U. S. Department

of Agriculture. From the same Department have been received Census Bulletin, No. 4, Agriculture—Truck Farming, and numbers of the Experiment Station Record, and Insect Life, No. 4 of volume 3.

Bulletins have also been received as follows from Agricultural Experiment Stations:

Connecticut, New Haven, Bulletin No. 106, Milk, Cream and Butter Analysis—Fertilizers.

Delaware College, Newark, Del., Bulletin No. 11, Soil and Crop Tests; Bulletin No. 12, Injurious Insects and Insecticides, Spraying Machinery.

University of Illinois, Champaign, Ill., Bulletin No. 12, Field Experiments with Oats; Bulletin No. 13, Field Experiments with Corn; Bulletin No. 14, Milk Tests; Bulletin No. 15, The Fruit Bark Beetle.

Iowa, Ames, Bulletin No. 12, Experiments with Potatoes, Sugar Beets, Sorghum, Relative Value Table for Milk, Injurious Insects and Insecticides, A Feeding Experiment.

Massachusetts Agricultural College, Amherst, Mass., Bulletin No. 17, Report on Insects.

New York, Geneva, Bulletin No. 28, Fertilizers.

Cornell University, Ithaca, N. Y., Third Annual Report.

North Carolina, Raleigh, Bulletin No. 73, The Best Agricultural Grasses; Bulletin No. 74, Work of the Horticultural Division, 1891.

Ohio, Columbus, Bulletin No. 9, volume 3, 2d series, Asparagus, Transplanting Onions.

Pennsylvania State College, State College, Centre Co., Pa., Bulletin No. 13, Black Knot on Plums, A Few Ornamental Plants.

Virginia Agricultural and Mechanical College, Blacksburg, Va., Bulletin No. 8, Potato Tests; Botany and Entomology Circular No. 2, Diseases and Insects Affecting the Apple and the Grape.

University of Wisconsin, Madison, Wis., Bulletin No. 26, Sugar Beet Culture in Wisconsin.

FOREST INSECTS, BY A. S. PACKARD, M. D. PH. D.

This is the title of the Fifth Report of the U. S. Entomological Commission, issued by the Department of Agriculture. It is a grand work in all respects—the scope which it embraces, the faithful study and presentation of its subjects, the number and excellence of its engravings and plates, and in all its various details. It is a work to be proud of by the Entomological Commission and especially by that member of it, Dr. A. S. Packard, whose actual work it is, and by the Department of Agriculture. As a practical treatise on the insects injurious to forest and ornamental trees it must take its place as the highest authority. It is written for popular use and is so arranged as to be of easy reference, and is also provided with full indexes. To give an idea of the arrangement, here are a few chapter titles:

Insects Injurious to the Oak

“ “ “ “ Elm

“ “ “ “ Hickory

“ “ “ “ different species of Maple.

Then the chapters are subdivided as follows: Affecting the roots—Affecting the trunk—Affecting the limbs and twigs—Feeding on the buds—Injuring the leaves—Injuring the seeds, etc.

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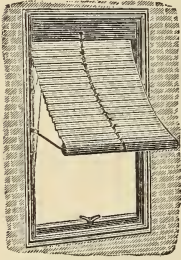


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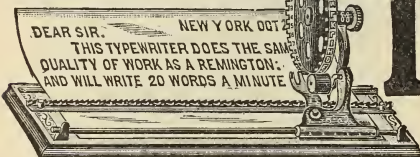
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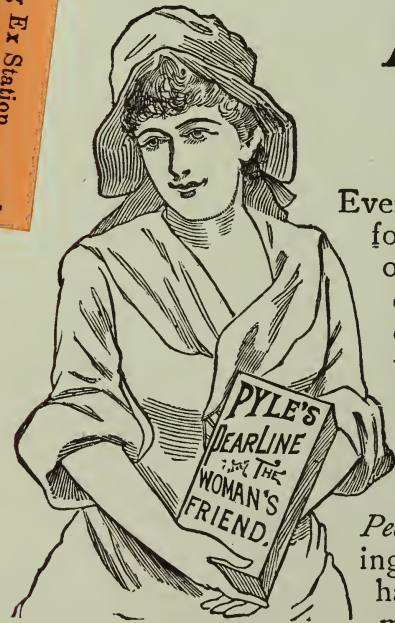
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Vol. 14.

No. 6

Vicks
Illustrated
Monthly
MAGAZINE.

JUNE, 1891

Published by JAMES VICK, SEEDSMAN, Rochester, N. Y.

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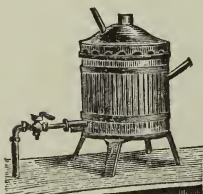
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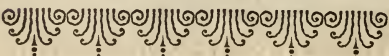
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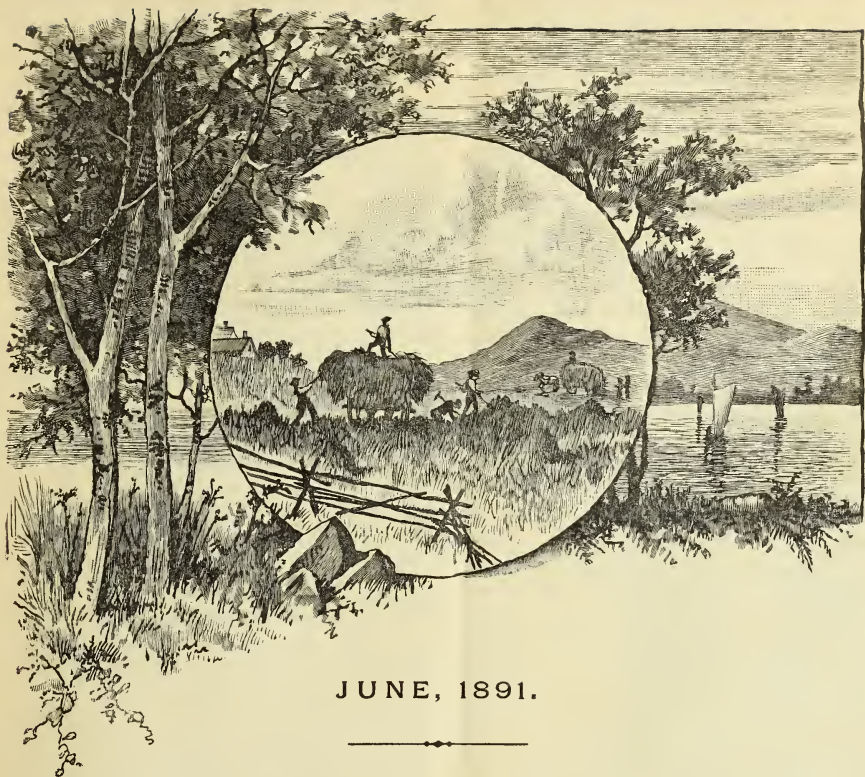
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JUNE, 1891.

THE ROSE is the favorite hardy flowering plant. It is raised everywhere. The country and city dweller alike rear rose-bushes. However small the homestead, if there is an available spot of ground, the rose is planted. Sometimes there is only scant room for its roots and a climbing variety spreads its arms and branches over the house wall. The sale of rose plants in this country reaches enormous proportions, and the demand is steady and increasing. The average life of the plants is short—far shorter than it should be, and as it would be, if the plants were properly cared for, as for the most part they are not. But shortness of life is not the only result of the lack of suitable care—the result in bloom is not what it should be, and although people will raise roses they are not satisfied with them. Supposing the garden ground where they are raised is adapted to the plants so far as relates to the character of the soil and drainage, and, usually this is so, the most noticeable fault is the poverty of the soil.

Roses are planted around singly, or in beds, on a piece of lawn and receive little or no care; perhaps a little stirring of the soil about them in the spring and nothing more. The rose makes a growth which is almost continuous from the time it starts in spring until checked by autumn frosts, and during this time requires a constant supply of food material in such form as to be readily appropriated by the roots. Such a supply of fertilizing substance should be provided for the plants every season, and without it the growth will be stunted and the flowers half starved. Now, the masses of the people who raise from one to a half dozen rose-bushes in their little door-yards quite neglect to provide fertilizers for their plants. There is nothing better for this purpose than well-rotted stable manure, but probably for most village and city residents this material is not available. Most of the commercial fertilizers on the market are excellent rose manures, and they are easily obtained, easily handled

and immediately available for the use of the plants. A good brand of "phosphate," then, is what can be relied upon and what should be generally used. It is procurable in small quantities, is not expensive, is easily handled and produces excellent results. "How much," some one may ask, "of this material can be safely applied to the soil about a rose bush?" It depends upon the manner in which the plants are set. If they are in beds it will require less than if set singly, in the grass. In the latter case the grass will get the benefit of a large share of the fertilizer. The practice of planting roses singly in the grass is not a good one. Where there is only a bit of ground it may be done, because there is no other course, but wherever there is room the plants should be set in well-prepared, deep-dug beds which have a good mixture of stable manure when first made, even if it is not used afterwards. In a bed one pound to 40 square feet is a good dressing; and at forty dollars a ton the cost is two cents a pound. Buying in small quantities it will cost more, but even then the expense is a little matter. Plants set singly with only a little circle of clear ground about them will need a greater proportionate supply, as their roots will only get a small part of the application. A quarter of a pound to a plant could be used, giving a little of it every week for three or four weeks. At midsummer there is a check or cessation of growth with the Hybrid Perpetuals for a short period, and then a new growth commences. At this time a new application of fertilizers is desirable, helping the growth for the fall blooming period. The plants must be supplied with good fertilizing material if plenty of good bloom is had; the operation cannot be neglected and good results follow.

Another almost universal fault observed with roses, on the places of ordinary growers, is the lack of pruning, or at least proper pruning. The bushes are allowed to increase in size year by year, getting higher and more bushy, producing more blooming branches, but there is no preparation of any greater space for the roots, nor are they any better supplied with fertilizers. As a consequence the yearly growth becomes shorter, though the shoots are more numerous, more flowers are produced but smaller in size and less

perfect in form. The plant struggles against great odds to preserve its equilibrium, that is, make its root system equal to the demand upon it and conserve its energies. Now, this is a condition that is not at all desirable for the welfare of the plant or the satisfaction of the owner. Close pruning every spring, leaving only enough wood to produce as many flowers as the plant can easily perfect, will give far finer blooms, and the plant will have the necessary vigor to enable it to successfully resist its numerous enemies in the form of fungi and insects. An enfeebled plant fails in such struggles when a strong one is able to resist the attacks. Plenty of manure and the fearless but well-directed use of the knife lie at the foundation of all good rose culture. A bed of monthly roses will do its best if the fertilizing material is applied several times during the season, or every three or four weeks. These plants keep up a pretty continuous growth and need a soil at all times well-enriched. The Polyantha roses, which are now becoming so popular, although dwarf in habit yet produce a great amount of bloom, and need also to be well fertilized.

A little aphid or green fly is the worst insect enemy of the rose and the rose-grower must be always alert to destroy this pest. Whale-oil soap in water, one pound to eight gallons is very commonly used for the purpose. The liquid is best applied with a garden syringe. A very excellent mixture for this use is as follows: Take four ounces of quassia chips, boil ten minutes in a gallon of soft water; strain off the chips and add four ounces of soft soap, which should be dissolved in it as it cools, stirring it before using. In half an hour after using either of the above liquids the plants should be well syringed with clear water which will wash the foliage clean.

The whale-oil soap solution is effective against the red spider which sometimes infests rose bushes, and also the black slug. One of the most annoying little insects is the rose-hopper or thrips, yellowish white, very active, jumping from place to place. It goes in little swarms and works on the under sides of the leaves and can do a great deal of damage in a little time. Syringing the under sides of the leaves with water in which is mixed

insect-powder—pyrethrum—has the effect to lessen their ravages. Although the rose needs some attention yet it will repay it with beautiful bloom, and what care it needs it must have. Many years ex-

perience enables us to say that the rose, when its requirements are understood, is not a difficult plant to manage, and that many plants are given more care and make far less returns for it.

OUR NATIVE PLANTS.

II.

The Indian Turnip, when in bloom, is a plant so remarkable in appearance as to arrest instantly the attention of those who see it for the first time, and once having seen it one can never forget it. Its best known name at the present time is probably, Jack-in-the-pulpit, which is the name

whence its name of Indian turnip. The corm bears at the same time, in this region in May, two leaves with sheathed petioles, which envelope the lower part of the scape. The leaves are three-parted, the

employed when speaking of it to children; and as it has been the subject of many descriptions in children's papers and magazines, woven into fairy tales and verse, and so frequently has it been the subject of illustration, by all manner of engravings, that its general appearance is well known, even by thousands who have never seen the plant itself. The Indian turnip is a native perennial plant inhabiting rich woods. It ranges from Canada to Florida and from the Atlantic coast to Minnesota and Eastern Kansas. There is no record of it westward beyond the parallel of longitude of the one hundredth degree.

The scape or flowering stem of the plant arises from a fleshy tuberous root-stock or corm which is turnip-shaped,



ARISÆMA TRIPHYLLUM OR INDIAN TURNIP, $\frac{1}{2}$ NATURAL SIZE.

leaflets being ovate and pointed in form and conspicuously veined. The flowers of the plant are small, requiring a good lens to see them well, and are borne on an upright club-shaped receptacle or spadix, which is the Jack referred to in the

popular name, and the pulpit is the curious spathe or sheaf which surrounds the spadix and turns over it like an old fashioned sounding-board. The flowers are of two kinds, staminate and pistillate, and occupy the base of the spadix. Sometimes the fertile flowers alone are on one plant, the staminate ones on another. The fruit is a scarlet berry. The spathe and the sheathing petioles are greenish and usually with dark purple and whitish stripes, the whole appearance, both in form and color, being most striking. The corm or turnip has a juice which is intensely acrid, and if the fresh bulb is eaten or bitten it stings like the pricks of thousands of fine needles; many a boy has tasted it to his sorrow and borne the memory of it a life-time. The corm is said to lose its acrid principle in drying.

The whole plant when fully developed usually stands from ten to fifteen inches in height, but it appears to vary greatly in this respect. Record is made in the *Botanical Gazette* of a specimen found in Trimble County, Kentucky, in 1846, which stood 30 inches in height; leaflets ten inches long and nine and a half broad; spadix, two and a half inches long; spathe, four inches long and the corm measured seven and a half inches in circumference. In the same journal, and the same year, the following measurements are given of a plant in Jefferson County, Kentucky: Height forty-five and a half inches; side leaflets twelve and a half inches long and eight broad, and end leaflet, thirteen and a half inches long and seven broad; circumference of corm, seven and one half inches. The writer giving these last measurements stated that "this was not an exceptional specimen," as in the immediate vicinity he measured twelve others which exceeded forty inches in length with others measures proportional, and that there must have been fully a hundred specimens exceeding three feet in height. Of course the localities named must have been specially adapted to all the requirements of the plants.

The Spring Beauty is one of the pretty

floral offerings of spring. The species most common in the Eastern and Middle States, growing in open woods, and the edges of clearings, is *Claytonia Caroliniana*, of which a good representation is here given nearly full size. The plant belongs to the Portulaca or Purslane family, is perennial, maintaining its underground life in a small tuber, and from this it sends up, early in spring, a flower-stem between a pair of opposite fleshy, and oblong spatulate-shaped leaves; a loose raceme of whitish or pinkish flowers with deeper colored veins forms the crowning glory.

This little plant begins to push its way through the ground almost as soon as the frosts leave it here at the North. It grows all through the northern range of States from Maine to the Rocky Mountains, and



CLAYTONIA CAROLINIANA OR SPRING BEAUTY.

extends southward along the Alleghanies.

Claytonia Virginica is very similar to the species described, but with narrower and longer leaves, flowers a little larger, produced in somewhat larger racemes and of a pink or rose color. It does not range so far north as *C. Caroliniana*. In the far West in the mountains of Colorado and in the Rocky Mountain regions are found other species. One, *C. Chamissonis*, almost aquatic, is found growing where it constantly receives the spray from the Lower Falls of the Yellowstone.

MY AMARYLLIS PLANTS.

The cluster of four blossoms rising slightly above the others in the accompanying illustration are those of the *Amaryllis Johnsoni*, one of the best known house plants of the present time. Notwith-

likely to fail in efforts to induce this bulb to yield its coveted bloom. Unlike the average house plant, such as the geranium, flowering begonia, heliotrope and others usually grown by flower-loving people,



AMARYLLIS JOHNSONI.

standing its popularity this *amaryllis* has often proved a *bête noir* to people usually successful in their attempts at floriculture. Improbable as it may seem at first thought, the person who is unremitting in the care of flowers, and who never neglects the daily watering on which so much of success depends, is the one who is very

the *amaryllis* does not need the ceaseless watering without which the former plants cannot live and thrive. In order to make the *amaryllis* send forth its beautiful flowers it must be accorded a period of rest when no water should be given, or only a sufficient quantity to prevent the bulb from shriveling and the fibrous roots from

perishing. After flowering, growth should be encouraged that the bulb may not only regain its exhausted vitality but also store up nutriment for future beauty. The amaryllis blossoms in the picture, with the exception of the four above alluded to, are those of a variety of which I have been unable to discover the name. Three flowers, being somewhat withered, were cut before the photograph was taken, leaving but ten instead of the "unlucky number thirteen." A specimen flower sent to a well known florist for identification elicited the astonishing information that it was that of "the *Imantophyllum miniatum*." This communication was the more startling in its originality from the fact that I had once sent to the same florist an *imantophyllum* blossom (as he advertised the plant for sale) asking if it were not the flower of that plant and was answered in the affirmative. However, there was some excuse for the error as the flower of the amaryllis and that of the *imantophyllum* are somewhat alike in color though widely different in form and size, the amaryllis being two or three times the size of the latter. Not daunted by my failure I sent a flower to another florist and was told "if it is not *Equestris* it is just like it." If, however, *Equestris* be a dwarf growing variety it cannot be identical with my amaryllis since the leaves sometimes attain a breadth of two and one half or three inches, and a flower scape which I have just measured is 31 inches and, including the division or pedicel, measures nearly 35 inches to the base of the flower. The bulbs, which are round instead of elongated like those of *Johnsoni*, attain a considerable size and send up two scapes each bearing from two to four blooms of most graceful shape and sometimes measuring seven or eight in-

ches in diameter. The form of the flower answers well to GRAY's description of that of *Reginæ*, having "a short tube" with the upper divisions of the perianth well thrown back and "the deflexed stamens turned upward at the end." Perhaps the color of the flower may as well be defined by salmon as anything, since orange or light red seems hardly a satisfactory description of the hue. In the center is a large greenish-white star extending about half the length of the perianth and adding much to the beauty of the blossom; some varieties of the amaryllis, like various *gladioli* of the choicer kinds, increase very slowly. This cannot be said of my amaryllis since it is most prolific, sending forth offsets freely when given a large jar to flourish in, though sparingly when crowded into a small pot. Two or three small bulbs of this amaryllis were given me from seven to nine years ago and I should be very glad to know the exact number of the lineal descendants of those two or three little bulbs, but have no means of making anything like a correct estimate. I only know that I sent to a florist about 100 bulbs, had the bad luck to get some "frost bitten" and have distributed others among my friends *ad libitum* for years until my stock is pretty well exhausted, save the six large bulbs which occupy two eight-inch pots and which I keep undisturbed. The six bulbs have this winter sent up twelve scapes which bore, if I have counted correctly, from 32 to 34 blossoms. Having cut one withered scape I cannot give the exact number. The bulbs began flowering much later than usual this season, commencing about January 1st. They are now, February 24th, in bloom, three flowers still remaining of the nearly two months of floral display.

E. L., *Hoosac, N. Y.*

A BEGINNER IN FRUIT-GROWING.

NUMBER 13.

Passing one day a piece of ground that a young man was covering four or five inches thick with an extra good article of manure I remarked, "getting ready for early cabbages?" "No," he replied, "for strawberries." "Is the land poor?" I inquired. "No, it is very rich," he answered. "Then why manure it that way?"

I asked in surprise. "Do you want to get an immense growth of foliage and no fruit?" "Why, Mr. C.," quoting a strawberry authority, "says 'land cannot be too rich for strawberries.'" "Yes," I replied, "I have seen that statement, but if you should see him and talk with him in reference to the ground you are preparing,

I think he would hedge a little." As a general rule people are not apt to get ground too rich but it is still possible to do so. What strawberries need is the fertility that nearest approaches a virgin soil; a soil that contains the remains of plant and animal life after it has been prepared in nature's laboratory. Such soil as you find in the corners of old Virginia rail fences, in blackberry thickets, in old stumpy clearings, anywhere in fact where cropping has ceased and nature has had her own way for a time. The nearest approach to this in cultivated farms is a heavy sod of grass or clover plowed under, and subdued by growing one or two crops of potatoes or wheat.

I was recently talking with a friend who lives only two miles from Mr. C., and who marketed last year \$500 worth of strawberries from an acre and one-half, and he told me that his crop would have been more satisfactory and yielded more money if the land had been poorer. It was a piece which had been heavily manured for cabbages and onions for several years, and the growth of foliage was excessive and the fruit so soft that it was difficult to get to market, six miles away, in a perfect shape. The varieties were Bubach and Haverland pollenized with Jessie and Glendale. He charged the softness to an over-supply of nitrogenous manure in the soil, or the same cause that makes wheat lodge. Had this field been planted to early potatoes, then sowed to wheat or stocked with clover, plowing under the young clover the next spring, and then planted to strawberries, probably 200 bushels of potatoes and 30 of wheat per acre could have been taken off without at all impairing the soil for strawberries. Mr. TERRY, who, by a three years rotation of potatoes, wheat and clover, gives no opportunity to the white grub, plants strawberries on a rich clover sod, and manures but slightly, so as not to lodge the wheat which follows the strawberries, the latter being planted in a corner of the potato field. Mr. T. gets very successful yields of strawberries in this way on land that produces one year with another 28 or 30 bushels of wheat per acre, so this is a very good gauge for the requisite fertility of strawberry ground.

Raspberries will thrive on equally rich soil, the only danger being from winter

killing, which is apt to injure them when growing too late in the fall, which they will do if the ground is too rich and the weather warm and wet. Blackberries are easily injured by too much fertility. The man referred to, as having soft strawberries, had some Taylor blackberries on very rich ground and the result was a remarkable growth but no fruit to speak of. This was last season when no blackberries were winter-killed. I live four miles from him and got, in spite of a severe drought, over \$100 per acre from two and one-half acres of Kittatinny and Erie on land that was extremely poor.

In this connection I would like to inquire whether the present striving for large yields by high manuring and constant cultivation will not result in time in barren plants. Double florists' flowers, as petunias, pinks, roses, etc., have all developed from single varieties and with this development has come a condition of partial or total sterility. Supposing the same thing should happen in the high cultivation of the strawberry and instead of getting quarts of luscious fruit we should get only bouquets of double rose-like flowers. There is only one thing that will defer such a result and that is that seed will be saved mostly from the results of single blooms, and that the seedlings saved bear such a small ratio to the general crop which is mostly grown from runners.

In this connection I might call attention to another and kindred matter, that of growing pedigree stock for planting. As most of my readers know, seedsmen are very careful to grow seed only from the best specimens. The continuance of the race is managed just as in breeding animals by intrusting the parentage to perfect individuals or those individuals who are nearest to the standard desired. How is it in fruit culture? The beginner purchases a dozen or a hundred plants. He sets them in a row and allows each to run at will to produce the plants for another year's planting. Although all are from the same parent (buds from the original) yet there is a chance for a difference. The same unknown cause that makes a geranium or a carnation sport (sometimes to such an extent that the sport bears no resemblance to the parent) might cause a variation in ripening, productiveness, or

hardiness, and if the sport added to diminished productiveness or barrenness an inclination to excessive production of runners (as is generally the case in barren plants), it is only a question of time when a plantation would be all barren, if propagated from half a dozen or less plants to begin with, as is the case of new or high-priced varieties. The variability of the Jessie strawberry, and the Crandall currant, may lie in some such cause, and a careful propagation only from plants seen and marked at bearing time as being of standard value might reinstate them among profitable and desirable kinds. I have repeatedly seen individual plants among strawberries and blackberries which, for some reason, produced fruit slightly different or much more abundantly than surrounding ones.

In a previous article I have deprecated

the trial of experiments by beginners as costly and unprofitable. I am not sure, however, that observations and experiments in this line might not be profitable to the beginner. Those who begin in a small way and for a year or two personally assist in gathering the fruit, have the best possible opportunity for observing differences and for marking them. If a plant excels in any way stick a stake by it with a reference number, and in a pocket memorandum jot down the reason it is marked. Afterward, if it excels, destroy neighboring plants, if it falls below, destroy it and its surrounding children. When a man has a dozen berry pickers employed and bushels of perishable fruit accumulating, such little observations will be next to impossible unless a specimen garden is kept, enclosed by an unscalable wall.

L. B. PIERCE.

AMONG THE RANCHERS.

II.

The long rains and chilly nights were past. Hundreds of toiling teams were passing to and fro across the furrowed fields, sowing wheat and barley; the autumn-planted fields were swiftly changing from black to green under the warm, spring weather. Each rising sun lit the naked, billowing heights and rugged barriers of the lofty Gavilan mountains; each setting sun shone through the wooded passes of the purple Santa Lucias, and far across the awakening valley. The dull haze and smoke from foothill fires, that had clouded the horizon all summer was swept away, and one said, in the fine, clear air, that it was a land of wonderful beauty, after all,—a very Palestine of a land, for the glory of its February spring-tide.

The Baileys went back to their Sunday-school recollections, and declared that the Salinas Valley "reminded them" of the Plain of Esdraelon, which travelers say is very beautiful in spring. The wild mustard was in bloom along the roads, and thousands of birds were hovering overhead, or hiding in the fresh, bright grass. A little later the whole valley began to show hosts of wild flowers, especially by roadsides and on the great pasture lands. Mrs. Bailey was never tired

of gathering them, and the glory of this strange, sudden burst of blossoming stirred her imagination deeply.

"That," said her husband, "is a mark of the border land between the temperate and the tropic zones. Palestine, Spain, California, and similar regions have rainless summers, and this marvelous unfolding after the winter rains. I should think it would be the despair of artists and writers, for I confess that I never before knew how beautiful a Californian February could be."

The little garden had prospered amazingly. Perhaps it was because the plants were all thrifty, came in excellent order, were well set in the soil just before a heavy rain, and had received the best of care. Perhaps it was because the garden was so small that the Baileys knew every leaf that unfolded within its boundary. John might have said, if he had chosen, that it was because his wife loved her plants better than anyone else ever did, since Madame Semiramis walked in her famous hanging gardens of Babylon.

"John," said Mrs. Bailey, "how my heart aches when I think of those poor flower seeds I bought, and there they lie, 'all forlorn,' in my work-basket."

"It is not your fault, Marian. We have

had only a fortnight of warm weather, I am sure the seeds will forgive you."

"I want blossoms, John, not forgiveness."

"What are flowers but forgiveness?" he replied shyly. Like many other quiet, pure-minded men, John Bailey had "a womanly side" to his nature, and though he was intensely practical, he could join his wife in her craving for beautiful things; but it was very seldom that he gave such ideas expression. She welcomed his shyly offered glimpse of a poetical thought with an appreciative look, far dearer to him than any words could have been. Searching in the angles of her octagonal work-basket, she found the tiny packets, and tossed them on the table, with pretty, graceful vehemence.

"Now, John, if you are a florist, a botanist, or any other kind of 'ist,' you may tell me what to plant first."

Then they read catalogue "hints," and "floricultural departments" in all the newspapers, until Mrs. Bailey declared herself "too bewildered with contradictions and discrepancies to even plant a potato till the next day." But one thing she knew; she must have some sand and leaf-mold from the river. Mr. Bailey went out and harnessed his team, drove round by the barn and put a large box in the wagon.

"I thought you were going to mend the pasture fences to-day," said his wife.

"No; I am going to have drift-wood from the river bottom," he answered.

"Oh, I see; and nice leaf-mold, and a pile of sand, besides. That is fine." So she put up his lunch, and watched the wagon disappear in the wave-like wrinkles of the wide, green valley. She did up her housework and sallied out, with a valiant heart, to plant her sweet peas and nasturtiums by the fence. Bailey & Co. had not as yet felt able to invest any capital in a trowel, but she took the family spade, and a broken piece of steel picked up on the highway from one leaf of somebody's wagon spring. This was conveniently curved and pointed, so that it made quite an available trowel. No one knew what a pretty picture she made, with her garden sun-bonnet on, working away in the fresh and fragrant earth, and singing to herself in her sweet, child-like way, and looking up now and then to see the buds

on her beloved rose bushes. She made a mellow seed-bed across the end of the garden, and smoothed the surface until an old farmer would have called it "like an ash heap." Then she let herself have the full luxury of that brief delicious moment when one tears off the corner of the modest paper bag, and slips the seeds into one's hand. There they lie, the bundles of cells, fibres, and coiled-up germs, silent, mysterious, and altogether fascinating.

"How jolly they look," she said to herself. "What a shame it would be to let a single one die because it couldn't have a chance." She counted them, every one, and resolved to see how many grew.

That afternoon, when the wagon came home, the first thing she saw was a huge bundle of willow rods, tied on top of the drift-wood.

"Please give them to me," she cried, as her husband drove up to the house.

"What on earth can you do with willow sprouts?"

"Just let me have a few and I'll show you," she averred. So he drew out a handful, and she crossed them on the ground in a pretty lattice pattern, "sweet peas, nasturtiums, smilax; all sorts and conditions of vine-hood," she announced.

In a few days more the slender willow wands were woven, and set in the garden. The warm, rich leaf-mold, and clean sharp sand were mixed in shallow boxes, the seeds were all sown, and the processes of germination had fairly begun. Pretty soon things commenced to sprout, and the boxes were full of animated, struggling plant-existence. Mrs. Bailey's faculty of "making seeds grow" had not failed her. There were seedlings enough to plant half an acre.

"John," she said, "I want to talk business."

"Not until after breakfast, Marian. I know this has been an expensive month."

"It isn't a deficiency, John; it's actually a surplus."

"Then go ahead."

"The garden is full; every inch of space will be covered when it begins to bloom. And I have more than a hundred pansy plants left over. I have lobelias and asters, and some rooted rose cuttings, and loads of things, that I can't take care of, and I hate to throw away."

He listened, went out after breakfast and smiled over the way in which the little garden was crowded "full to the brim." Then he went off to his work without another word. But Marian Bailey knew that he would not forget. She had given him a problem to solve, and she was willing to wait for the answer.

"Marian," he said that night, "there are several ways for you to get rid of your plant surplus. You can throw them away—"

"Go on, Mr. Bailey."

"Or you can put a sign out on the road: 'Plants sold here,' and may be—"

"Go right on, Mr. Bailey. You know it's two miles to the main road."

"Or, which I cordially endorse, you can give them away."

"Now you are sensible, John. That is what I wanted to do. But whom shall we give them to, that is the question."

"Marian, do you not remember that once, last year, we drove seventeen miles to the head of the valley, and in all that distance there was but one garden, and that a very shabby one? And do you not also remember that there is a school-house two or three miles away, a rusty old shanty by the County road? Now, suppose you should try to get the school children to take your surplus stock. I know something about the district. Nearly all the families are renters, and the attendance fluctuates a good deal. After a bad season people move away, until perhaps there will not be more than four or five children in the district; at present there are more than forty. I will drive you over there some afternoon, and you can talk with the teacher and the children."

A few weeks later Mrs. Bailey gathered some of her rose-buds, and filled several boxes with little plants, all in the nicest possible condition for transplanting. Her husband took her to the forlorn-looking school-house, and they introduced themselves to the elderly and tired-out teacher, Miss Sanborn. In a few minutes Mrs. Bailey was persuaded to venture upon a "talk with the children," which she managed in a way that appeared to John nothing less than pure genius. She told them how beautiful flowers were, and how ready to repay good care. Every one might have a garden, and at such

slight expense. She described her own garden, and some of her methods and experiments. Then she wanted to know if there couldn't be a garden in the school-yard, close by the well, and if each boy and girl would not like to carry some plants home, and see whether they could be made to grow. The idea took at once, and the dear little lady gave each child a share in the "surplus" of her garden.

"Now children, come and see me some Saturday afternoon and tell me how they are growing," said she. "Then we will find out who has the best garden. Perhaps we shall be able to have a flower-show in a few years, and prizes for the prettiest roses. Remember, lots of water for your plants; lots of hoeing about them, and lots of attention, all summer. Then you'll have loads of flowers."

Before she was half done, every child in the school-room was determined to have a garden. The next holiday a little school-girl stopped her father as he was driving along the highway. "Papa, please stop here and let us go in. I want to see the pretty lady's garden that she told us about." So they drove to the Bailey house, and were very cordially received. Mrs. Bailey left her work and showed the child everything from the canary-bird vine's tendrils to the Maréchal Neil's golden roses, and one of these last the little visitor carried home with her, held close in her hand, and the touch of a warm, motherly kiss was on her soft cheek.

After awhile it grew quite the fashion among the school children to go and see Mrs. Bailey now and then. She told them stories, and baked them mysterious culinary surprises, and persuaded them to help her weed her garden, and sent them home as happy as possible, to spread still further the new gospel of the little rose-garden oasis in the wilderness.

Long before the end of May, Mrs. Bailey began to hear good reports of her "surplus stock." At least a dozen families, most of them renters, had yard-wide gardens, and boxes on their porches. She went to see them, and her pansies, portulaccas and petunias were here, there, and everywhere. Some were, as she joyously declared, "much better than her own," and she sometimes delighted the hearts of the children by begging for slips or

seeds. But her own little garden, started earlier than any other in the valley, and containing, besides, some well-chosen shrubs and roses, bid fair to maintain its primacy against all comers. She often came home with garden stories to tell Mr. Bailey.

"John," she said one day, "you know the way the calla lily grows in moist places in all the California valleys? All it wants is water, and it makes a perfect mass of leaves and flowers bloom all winter, and sometimes grows almost as high as my head."

"Yes, I know."

"Well, Mrs. Perrin was telling me about the time she lived in Sacramento. There was a great clump of calla lilies just at the depot and they were in full bloom one January, hundreds of them, when an emigrant train from New York came in. One of the passengers was a real nice old lady from Indiana, who was going to visit her daughter in Sacramento. When she left home she had thought and thought whether there wasn't something real old-fashioned that she could take her daughter, whom she had not seen for years. At last she remembered how fond the daughter had been of calla lilies, which they raised in the window, and so she took a plant with a bud on it, a plant in a five-inch pot, and started for California."

"I see," said Mr. Bailey, "only seems to me you begin at the wrong end of this story."

"So my poor old lady," said Mrs. Bai-

ley, tossing her head, "rode into Sacramento City, with the calla lily plant in her lap, where she had carried it at least half the time since she started. She looked out when the train stopped and saw right under the car window that rod-square calla lily mass. She 'took it all in' at once, and, when she thought nobody was looking, she dropped her poor little pot out of the window, leaned back in her seat, and shut her eyes. Pretty soon her son-in-law came through the car, welcomed her to California, and took her out to the street-car. One of the companions of her journey, unobservant of the situation, hurried after her and told her that she had left her lily. 'What is it?' said her son-in-law. 'Only a piece of my foolishness,' said the poor old lady, and then they went home. She found a hundred yards of calla lilies planted along the fence, and went off and had a good cry over the affair. Now wasn't that a dreadful little horticultural blunder?"

"Her respected daughter ought to have written to her years before, about the way that callas grow in California. That is the leading moral, as far as I can see," said Mr. Bailey, reflectively. "And if she was any decent kind of a woman she would have been glad to have the calla lily from her old home, even when she had acres of them in the door-yard. That is the secondary deduction, and you may offer them to Mrs. Perrin with my compliments."

CHARLES HOWARD SHINN.

TO BE CONTINUED.

WYOMING'S NATIVE FLORA.

The study of flowers at once delights the eye and interests the mind. The rapid strides made in floriculture during the past thirty-five years have been wonderful; but in the midst of it all we can not quite forget the wild flowers of our childhood days:

"The flowers we love, they are those we gathered
Years ago, when we played at home!
Flowers by the door-stone, dropped and scattered
Here and there, as a child would roam."

How well I remember the "Bouncing Bet" of my dear old grandmother's garden; I knew it by no other name and years afterward when that grandmother's kindly face and toil-worn hands had crumbled to dust, I used to search every

garden with which I came in contact hoping to catch a glimpse or inhale the breath of this old favorite, and failed; inquiry elicited no information. Later on, when I began the study of flowers with a view to become a florist, I searched the florists' catalogues for this flower,—in vain; is it surprising if I began to believe it had died with my grandmother? But I persevered, and finally found it under the name of *Saponaria officinalis*, and learned to my deep disappointment, that it was considered little better than a weed. Be that as it may, it will ever be held by me in the tenderest esteem.

The low-growing flowering plants of

Wyoming form no inconsiderable part of her plant life. There are numerous species and varieties which I am utterly unable to analyze or classify; a skilled botanist would find here a rich field. Below you will find enumerated such as I am familiar with; but shall pass each with brief mention, as most of them are too well known to need describing. Cacti are everywhere present. We have three *Opuntias*, commonly called prickly pears, only one of which is worthy of cultivation; then there is *Epiphyllum*, crab's-claw or lobster cactus, and another specie which is ball-like and I think is an *Echinocactus*. There are one or two other species to be found. The *Yucca filamentosa* is here in great numbers. The wild clematis, wild Tiger lily, wild geranium, or crane's bill, cyclamen, sweet peas, convolvulus, larkspur, wild tulip, and the new primrose Ice King, which has so lately been introduced in the East as a novelty, are all indigenous to Wyoming. The majority of those named would prove a bonanza to an enterprising florist. In addition to the above, we have a skeleton plant, which from its peculiar construction and curious appearance we have named "living sticks." This name is entirely original with us, friends, so please leave us in peaceable possession of the patent. The

plant itself suggested the name. It is a bundle of leafless stems twining and interlacing each other in a manner both interesting and amusing; the color is a beautiful pea-green. One, while looking at it, can think of nothing but a bundle or ball of jointed sticks. It grows to a height of about two feet, by the same in breadth, and produces a little blue flower about the size of a silver dime; in the fall the stems detach themselves from the root and are blown by the wind whithersoever it listeth. Some people call them "tumbling weeds;" they do tumbling enough, surely, but they are totally unlike the tumbling weed of the East, besides, the name is not suggestive. Our wild tulip is worthy of cultivation, in many respects I deem it superior to imported kinds. It is pure waxy white, save the throat which is of a pale green color; the bulb is white, oblong in shape, about the size of a small onion set, and is edible, in flavor not unlike the cocoanut. It sends up a flower stem about two feet high. Of ferns we have some noble specimens, and several varieties which in our mountain canyons attain a height of four feet, and are truly beautiful; those in the village are small, but no less attractive in form and foliage.

L. E. R. LAMBRIGGER.
Big Horn City, Wyoming.

SOME NORTHERN ROSES.

Of course in the northern States where the frost king reigns six months of the year it is impossible to expect such rose gardens as Mr. SHINN graphically describes in the February MAGAZINE. But I am sure with a proper amount of the same kind of culture which he says is best for the *Maréchal Niel* in California, there could be roses grown in the North that would surprise many. The *Niel's* requirements were good drainage, careful training, and well-ripened wood every autumn; and they are what roses require everywhere, north or south. The rose gardens of florists and the wealthy are not included in my ideas, but those of everyday people.

Now, my native town in southwestern Maine is not noted for rich soil or favorable climate, yet I know of some rose trees that will *almost* rival Mr. SHINN'S. The

first one that I will describe is an old-fashioned white rose, perhaps a descendant of the famous white rose of old England. This variety of June roses is quite common in town, and when well rooted the plants are of sturdy growth, the lusty canes standing well above fences, and in June are covered with masses of the most fragrant of roses, beautiful both in bud and bloom. But, one rose-bush is the largest I ever saw, being a thicket of canes, and in size and height it is much like an old lilac-bush and seems as hardy as the apple tree near it. It must be of great age, for three generations of father, son and grandchildren have lived in the low, weather-beaten farm-house before which it grows. I never saw it in bloom, but have been told it was grand and am sure it must be, for its equal is not common. I have heard that there are sev-

eral specimens of the same variety in neighboring towns much like it. Yet this plant looks as if it had had neglect instead of care, the dead wood mingling in careless profusion with newer growth.

Two, hardy, yellow, June roses which grow here are far from common specimens, and are very fine when in flower. They are some twenty-five years old, and reach up to the eaves and cover half one side of the one-story farm-houses they adorn. They are a wilderness of beauty; as in early June before any other variety of rose shows color, they are masses of lemon color—a living, growing poem worth going miles to see.

I saw last summer in our village some specimens of the newer hybrids that were grand, though the soil is naturally a dry, sandy plain, not fertile like California, but only valuable for building lots. One of the plants, bearing brilliant pink roses, was on a trellis in the corner of a bay window, and the tenth of July it stood as high as the window, a mass of bloom with hundreds of flowers. Another bush stood by a piazza pillar, reaching up to its roof and I think I can say there was a half thousand roses in bloom at once.

A lady friend told me of her three-year-old Paul Neyron that has its canes grown to the eaves of her one-story cottage, bearing roses as large as a pint bowl in June and July, and again in September and October.

The last which I will mention is the Queen of the Prairie variety, and runs all over a bay window and its roof, the loveliest tangle of crimson in its season. Now, if roses will grow like these in the North, without what can be called extraordinary care, what kind of rose gardens would be

possible if they could have suitable culture, even like that given to field crops.

Mrs. WELCOME of Yarmouth, Me., has proven that the tender tea roses will live through our northern winters if well protected with sods and evergreen boughs. And I know from experience that the ten and twenty cent roses sold by florists, planted out early in May will bloom some by July and along to November. My Hermosa had well grown buds as late as the 23d of November last fall, standing all the freezing up to that time without covering. So the tea roses are practically frost-proof in the North, while they don't cost or require more care than those bedding plants that blacken at the first cold night.

But, if one does not care to be bothered with the tender kinds, there are plenty of Hybrid Perpetuals to select from, and which are nearly as free bloomers all the season. So, one need not go without ever-blooming roses if he wish to have them. The American Beauty, Paul Neyron, Dinsmore, Mrs. Chas. Wood, Mrs. John Laing, Albane d'Arneville, the new perpetual white moss, Mousseline, the newer Mary Washington, from Mount Vernon, and many others, catalogued by all florists, are said to be as hardy as June roses, and all of these varieties can be bought at low prices.

The only trouble in growing roses, hardy or tender, is the bugs, slugs and thrips. How these little pests will make us great giants of humans fight for our roses. No matter how thick they are, they never seem to kill the bush but devour the foliage and buds when we want them for "ourselves." Do you suppose the Californians have them to fight? C. H.

MY ROSES.

The mellow tint of purest yellow gold;
The soft, rich glow of happy maiden's blush,
When love's first thrillings set her cheeks aflush;
The ruby hue of vintage rare and old;
The glint of amber by the storm-waves rolled
From out the sea; all colors that the brush
Of artist finds in clouds of evening lush

With flame from dying sun; the autumn wold;
The thistle down; the drifted banks of snow;
The seashell's tinge; the alabaster's white;
The opal's fiery heart; the amethyst—
With all these tints at morn my roses glow;
And lift their glad, sweet faces to the light,
Their velvet cheeks by dews of heaven kissed.

H. L. WELLS.



FOREIGN NOTES.

THE COCKSCOMB.

Cockscombs to be perfect must be dwarf; the depth from the top of the pot to the top of the comb should be little more than 12 inches or 13 inches. It will, therefore, be clearly understood how desirable it is to prevent the plants from becoming drawn even in the seedling stage. The seed pot should be plunged in the hotbed within a few inches of the glass, and if kept fairly moist and shaded the seeds will soon germinate. After the seed has germinated, it being so desirable that the little plants do not become drawn, the frame will have to be carefully ventilated. As soon as the seedlings are strong enough, pot off singly into three-inch pots, potting up to the seed leaves. The same kind of soil as used for seed sowing, but in a rougher state, will be suitable, taking care that it is in a sufficiently warm state before being used, as cold soil would be likely to cause a considerable check. After potting off the pots will have to be plunged, and this is a very essential point. Indeed the plants will have to be plunged up to the rims of the pots until the combs are fully developed and grown to their fullest size. The plants will have to be carefully watered, and as the sun loses power in the afternoon, both they and the frame should be sprinkled over and the lights closed for about two or three hours, afterwards putting on a small amount of ventilation for the night so as to let off rank steam. I have seen it recommended that to grow cockscombs well the plants will have to be kept potted on, so as to prevent the roots from becoming pot-bound, but this is a very erroneous opinion if the plants are to be kept dwarf. From the three-inch pots repot into four and one half-inch ones, the compost now used being two parts fibrous loam, one part leaf soil, and the other part well-decayed cow manure, with a fair sprinkling of charcoal and sand. When repotting, place the plants as low as possible. Return to the frame and push the plants ahead as much as possible, shade being only needed to protect the foliage from

the hottest sun. The plants seem to revel in tropical treatment. At this stage it is a mistake to allow the roots to become in any way pot-bound; therefore as soon as ready repot into seven-inch or eight-inch pots, or even nine-inch to get the biggest combs. Take care that the pots are efficiently drained. Give very generous treatment, sprinkling and shutting up with abundance of sun heat, when the combs will swell rapidly. As soon as fairly rooted liquid manure must be applied, a top-dressing of sheep droppings also being beneficial. As the combs advance in size more ventilation must be applied, especially during the hottest part of the day. As the combs reach their fullest development gradually harden off, eventually placing the plants in a warm greenhouse or conservatory. At this stage the watering must be carefully performed, too much causing the stems to damp off. During the late summer and autumn months the plants are very effective arranged in the conservatory. Instead of dotting the plants about, I arrange them in good-sized groups with the addition of Maiden-hair Ferns, this greatly adding to the effect and taking off the lumpiness or monotony of the group.—A. Y., in *The Garden*.

LYGODIUM SCANDENS.

As this, one of the best of all climbing ferns, is now growing away freely, it will be well to remind growers of an excellent method of supporting the long slender fronds when they are required for use in a cut state. Given a wall of fairly good height, such as that of a lean-to vinery, strings should first be fixed near to the pot, radiating upwards, but sufficiently far apart to prevent the fronds from interlacing. These should be provided in number near to that of the fronds, so that the strong growths may each have a separate string and weaker ones not more than two together. To these strings the growths should be trained as they grow; oftentimes they will do this in a spontaneous manner. Then when required for

decoration the needful fronds can be taken off without any difficulty. I have seen this plan followed with the best results. Fronds from eight to ten feet long when they can thus be taken entire are splendid additions for vases or arches, or for twining around pillars.—H., in *The Garden*.

POLYANTHUSES AS POT PLANTS

When grown in a cool house, polyanthuses come into bloom quite early in the year, and are very effective in the conservatory, much more so than many plants which require more heat to force them into flower early. We grow a large quantity, chiefly the yellow hose-in-hose varieties. Some of these are very fine, varying in color from pale primrose to deep yellow. By selecting the best varieties from year to year and isolating them from the colored varieties, the strain may be much improved. With the greatest care, however, the seedlings will vary considerably, even when the seed has been saved from the best yellow varieties, which have been grown quite away from any with colored flowers. I have had many with red or crimson flowers among a batch of seedlings. For pots, the seeds should be sown in April. The seed-pots should be placed in a cool shady position, and as soon as the seedlings are large enough they should be pricked off. Later on they may be planted out, or they may be grown in pots. If grown in pots they should be potted as soon as they are large enough and grown on in a cool frame; during the autumn they should be well exposed, otherwise they are apt to begin flowering, which spoils them for the spring. If placed on a shelf in a sunny position, they may be had in flower quite early in the year. They will do best in a house where there is only just sufficient heat given to keep out the frost. The first batch may be put in in December, and by putting a few in at intervals a continuous succession may be kept up, and will make a bright display at a little cost. The delicate perfume also adds to their charm, and I feel sure that anyone who once grows them will continue to do so, for they find admirers among all classes, especially in a season like the present, when everything out of doors is so backward. The alpine auriculas are also very

pretty as pot plants, but they do not produce quite so much bloom or last so long as the polyanthuses. I find it is only two-year-old plants that will make much display. The great advantage of growing the hardy plants, which require so little warmth to bring them into bloom early, is that they last better and are altogether more satisfactory for the cool conservatory than plants which have been grown on in much heat.—F. H., in *The Garden*.

FERNS IN LONDON.

One of the most notable features of the Covent Garden flower market is the immense quantity of small ferns to be seen. One would wonder what became of them, seeing that all the year round these small ferns are on sale. At one time fern-growing was confined to a very limited number of growers, but now plants of various sizes may be found throughout the market. It is therefore evident that the public favors fresh green foliage in preference to so much floral display, as was formerly the case. There is no better test of public opinion than the open market. Growers soon give up anything that does not find a ready sale; on the other hand, perhaps they are rather slow in taking up new ideas. This is fully demonstrated at the present time in the limited number of sorts of ferns they cultivate. The great bulk of ferns now to be seen in the market is confined to, at the outside, a dozen sorts. Yet there are many other varieties which are even more beautiful and perhaps equally serviceable for decoration.—*The Garden*.

MONSTER MARECHAL NIEL ROSE.

There is at the present time flowering in the Vicarage Street Nursery, Warminster, a wonderful Maréchal Niel, which was planted on April 16, 1888, which made the first year after planting shoots 25 feet long, and produced 200 roses before it had been planted twelve months. Next year its shoots reached to the length of 30 feet, and the number of blooms amounted in 1890 to 2000. The plant covers at the present time an area of 450 square feet, and is carrying flower-buds and blooms of more than 3000 in number.—T. H. HANNAY, in *The Gardeners' Chronicle*.

DAFFODILS BY WALKS.

The old double yellow daffodil, now flowering so abundantly beside our woodland walks and in the more open parts of the covert, where till recently the ground was white with snowdrops, serves to remind us how beautiful many otherwise bare and flowerless spots might be made by planting the bulbs of this and kindred kinds and leaving them alone. Such flower gardening entails no expense beyond the first outlay for the purchase of the bulbs. Where the common daffodil grows there also will the Tenby and other kinds flourish, as well as the Poet's narcissus. These are mentioned because they are common, and consequently cheaper to purchase largely and plant extensively. It is better for those who can to grow them thus than to fill the garden borders with them, and occupy space where plants that need care and culture should be grown. Even such choice daffodils as Horsfieldi and Sir Watkin I have seen flowering finely in the grass of an orchard, but if we make the most of the commoner kinds first we have plenty to do.—*The Garden.*

FRAGRANT ROSES.

A correspondent of *The Garden* has this to say of sweet-scented roses :

"Although almost all roses are sweet-scented, still there are a few so far in advance of all others in this respect as to claim a few words to themselves. It would be very difficult to say which rose is the sweetest. Some people cannot distinguish the grand fruity perfume found in Catherine Mermet. I think it is strongly suggestive of apricot. Socrates is another very fruity smelling rose. La France has a delicious perfume quite peculiar to itself. Some years ago when a poll was taken upon fragrant roses this variety was placed at the head of the list. I remember placing it at the head of my return paper, but should hesitate to do so now, as Socrates, Souvenir d'un Ami, Catherine Mermet, and Comtesse Riza du Parc all surpass it in my estimation. Many of the old roses possess grand scent, and as a body are superior to the recently introduced varieties. Baronne Prevost, Abel Grand, Général Jacqueminot, Mme. Clemence Joigneaux, Sénateur Vaisse, Mme. Furtado, Louis Van Houtte, Géant des

Batailles, and Anna de Diesbach are a few old perpetuals that are extra sweet, while Souvenir de la Malmaison and Baronne de Noirmont are two good Bourbons. The old Cabbage or Provence rose is too well known as one of the very sweetest to need any special mention here. Maréchal Niel is the sweetest of all yellow roses. Among the newer roses, Mme. Renahy, The Puritan, and Mme. Joseph Godier are particularly sweet. Anna Marie de Montravail and Gloire des Polyantha, two miniature roses, are also very sweet."

A BLUE CHRYSANTHEMUM.

A correspondent of *The Gardeners' Chronicle* writes thus of a plant that may some time be the wonder of the horticultural world, but which at present seems very improbable :

"In my opinion, this chrysanthemum, if it ever should arise, is more likely to arise from a sport than a seedling. With varieties at present in cultivation, there is a great tendency that way. I have seen traces of blue in sported flowers which came near to the desired goal. Last season blooms of Lady Dorothy, which is an incurved kind, and itself a sport from Hero of Stoke Newington, showed distinct signs of a color that was more blue than purple in some parts of its petals, here and there blotches which prompts me to apprise those interested in this novelty to be on the look-out for further freaks of the kind, and to carefully preserve plants which show the slightest inclination to assume a blue color. It is a well-known fact that some sorts do exhibit signs of sporting several years before an actual sport occurs."

A NEW INDUSTRY FOR WOMEN.

An association of women is about to start in business to undertake by contract the care of London conservatories, window-boxes, balconies, and small gardens, by the year, season or month. The members of the association will themselves attend to all orders, employing men for the digging and rough work only. Plants will be received and tended at the premises of the association during the absence of the owner from town. The title of the new business is the Women's London Gardening Association.—*The Gardeners' Chronicle.*

PLEASANT GOSSIP.

A LITTLE GARDEN TALK.

It would be fine if there was a royal road to a luxuriant, orderly flower garden—if Princess Something or Somebody would touch the weeds with a fairy wand and shrivel them up, and at the same time hasten the growth of our pansy bed, hurry up the phloxes and open out great beautiful poppies. Instead, we must get humbly down upon our knees and earn our flowers by the sweat of our brow. And after the June rains how the weeds grow! Only the utmost vigilance and industry will overcome them, and the sooner they are exterminated the better. A little waiting for the "convenient season" will put the garden in a hopeless tangle, and double the amount of work which will finally have to be done. There is no better way than to pull the largest weeds, then work the beds over with the trowel, taking care not to displace the young plants. Next to weeding, frequent watering is essential. It is quite useless to put the tender flower infants in the hard, dry soil and expect them to reach maturity without further care. They must be nourished, and frequent watering with tepid water is their natural diet. A lady remarked that she did wonder that her verbenas made no growth; the earth was literally packed around the tiny seedlings which were yellow and shriveled. When the garden is nicely weeded attention should be paid to the climbers, which must not get the better of us by a day—for the most refractory thing in the vegetable kingdom is a go-as-you-please climbing plant. A very pretty effect can be produced by training the growths fancifully. A standard, four feet in height, with six or eight pieces nailed to its top and extending out umbrella fashion, is a pretty device; run the shoots up the standard, then let them cover the top as they will, just giving them an occasional tie to keep them in bounds. Nasturtiums are particularly showy trained in this manner, while in no other way is the beauty of the rich tropical foliage of the aristo-

lochia shown to such advantage. Virginia creeper needs an occasional helping hand by way of strips of leather or stout cotton cloth to keep it in place, although once established it has a very graceful way of going about its business unassisted, especially if the task set it is to cover the side of an old building or to decorate a stump. Hop-twine is serviceable in tying the clematis to the piazza pillars and arches. It is strong, yet soft enough not to cut the stems. I have always supposed the clematis perfectly free from disease or insects but found on the main stalk of a native clematis, which was growing over an old stump, a large black bunch—a fungous growth which nearly killed the vine. The akebia, which, by the by, is one of our most charming vines, requires a stout string for support, and if it is not furnished, and the vine simply nailed with strips, each succeeding growth will twine around the first, until a rope is formed that will eventually die from furnishing its own support. The perennial pea in some situations is one of the most useful of hardy climbers, for rambling over hedges and giving them a touch of rose color, or for covering a strip of old fence; if planted in the garden, say in an out-of-the-way corner, it needs support to prevent it from straggling over too much surface. Fine stout stakes firmly set in the ground and laths nailed around them at the top make a frame which keeps it within bounds.

The scarlet clematis, *coccinea*, does best when planted in very rich soil, its top kept pinched back until it forms a shrub-like plant. It is not such a wonderful acquisition after all; it must have very careful treatment to thrive well; planted by a piazza where the rain beats on it, or in any of the places where people usually want vines, it is useless. The only really valuable climber is the one that will endure hardships, and the Virginia creeper and our native clematis, *Virgin's bower*, take the palm for spontaneous growing and beautiful autumn effect. The climbing bitter-sweet

may be added to the number very truthfully. The Adlumia, or Wood Fringe, is a charming vine, so delicate and graceful, but needs careful training, for once in a mat, its pretty foliage loses half its beauty.

If the amateur gardener will provide an outfit consisting of a small basket furnished with tacks, small nails, a hammer, strips of stout cotton cloth and a ball of twine, there will be no bothersome looking up of conveniences, and no neglect because they are not at hand. It is just as important to lay in a stock of white hellebore so that the roses may receive prompt attention, and that the currants may not be denuded of their leaves while waiting to send to town.

Among the roses, Marie Baumann and Anna de Diesbach made a splendid display last summer, while a bush of Balti-

there was an interval of a few sunny days in which these roses gave us, as it were, a *l'envoy* to the poem of summer.

ADA MARIE PECK.

CHINESE SACRED LILY.

The engraving herewith shows a group of the famous Chinese Narcissus as seen growing in a garden in Hong Kong. We have not heard of its being cultivated in the open ground in this country and do not know how, or in what regions of the country, it would succeed. But the bulbs are now pretty well known and extensively employed for blooming in dishes of water. The practice of raising them in this manner first received its impetus in California, the bulbs being brought by the Chinese to San Francisco. The introduction of the bulb and the information



THE CHINESE NARCISSUS IN A GARDEN.

more Belle attained a height of 15 feet, running riot over a stout frame made of cedar posts firmly set; the cross pieces of this frame were of cedar and the whole was very strong and the stalks of the rose were firmly tied. The foliage was showered with hellebore early in the season and at intervals afterwards and the result was glossy, luxuriant leaves and hundreds of fragrant, creamy blush-tinted blossoms. Magna Charta always gives good satisfaction, as does Paul Neyron and Coquette des Alpes. The dear little "Jap" roses—the Polyanthas, are a never ending source of delight; long after frosts came last fall,

in regard to it, which has been everywhere published, have effected at least one good—it has spread abroad the knowledge of blooming bulbs in water, so that the window cultivation of bulbs for winter bloom has greatly increased. But aside from this gain, there is probably little or nothing to give this particular variety credit for, and we should undoubtedly be quite as well off without it. The marked peculiarity of the bulb is the numerous spikes of flowers it sends up; on the other hand, the spikes are few-flowered, and the color is not a good, clear white. The writer who noticed this bulb

in connection with this engraving when it first appeared in the *London Garden*, thus describes his mode of treatment: "The bulbs are totally immersed in bowls of gravel and stones and covered with tepid water. Some allowance must be made for the swelling or expansion of the bulbs, and the tepid water should be replaced by a fresh supply every day if the quickest and best results are desired. Bulbs so treated will produce from five to ten spikes of about six flowers each." The bulbs of this variety produce more foliage than those of any of the European varieties, but for house cultivation, either in water or pots of soil, the Paper White Narcissus is preferable on account of its purity of color, and greater number of flowers on a spike and their larger size; it is equally as desirable for fragrance and ease of culture. The Paper White has more flowers to the spike but the spikes are not as numerous as those from the Chinese bulbs. The latter cost about four times as much as the Paper White; for the same expenditure of money more and better bloom can be procured by purchasing the Paper White Narcissus and it can be bloomed in a bowl of water the same as the bulb of the Celestials.

A NOVEL PIT.

First let me say that our homestead is an old one that has been in my husband's family for one hundred and fifty years. The first house was burned, but the present one can look back as far as the hero in Edward Bellamy's famous book. On the south side of the house, and just under a sitting-room window, was a large old-fashioned cellar entrance, seldom used, never in winter.

One fall I was wishing for a pit for storing roses and other plants, when the good man said "how will it do to put a sash over that cellar-way and use it for a pit?" As "Barkis is willing" it was soon done. A heavy frame was made, large enough to receive two greenhouse sashes each three feet by six; the sides were bricked up in cement, and thick board shutters, opening in the center, enclose the whole. When finished the shutters were found so heavy that each half was sawed lengthwise through the center, with hinges that allows each half to be folded back, making it very convenient to handle. After

three years use I can say it has been a success every way; half-hardy plants and roses keep beautifully, and best of all are the pansies, daisies (Bellis), and Swanley white violets, that bloom all winter long. On cold nights the door is opened into the cellar to even the temperature. There has never been the least appearance of frost. However severe the weather outside a ready entrance can be gained through the cellar. As my conservatory is small, and I am something of an enthusiast about flowers, it often overflows. I find the pit a fine place to keep back plants, and also to receive one that has parted with its beauty. CELIA.

SOME ANNUALS.

There are a few common annuals which should be more highly valued than they are. One reason of indifference to them, I think, is lack of proper arrangement for best display. Take for instance either the annual delphiniums or the centaureas; plant the seed very early in a bed deeply dug and mellow, in two rows 12 inches apart, then scatter freely, over the whole space, seed of yellow coreopsis (Golden Wave is better than the old sort) and a border on one side of sweet alyssum. After the plants are well established thin out the ground work (centaureas or delphiniums) to about one foot apart, but leave the coreopsis thickly and irregularly set in and between the rows and enough of the alyssum to make a compact border of white. It is better to prepare and plant late in the fall, making the bed deep, mellow, and slightly raised and when done cover with brush to keep all from being disturbed till spring opens, yet if this is not possible spring will do, but the blooming will be retarded. These flowers all need the same treatment, namely: very early planting, a warm situation, and if the ground is pulverized one foot deep the fierce summer heat and drouth will not hinder the growth or bloom.

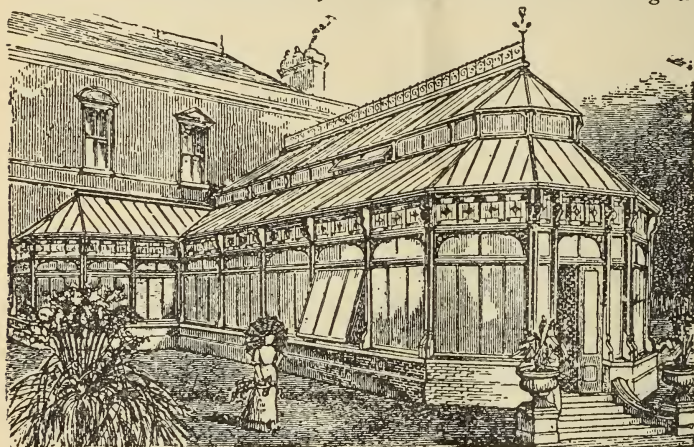
Larkspurs have rather a stiff appearance to an artist's eye which is quite toned to a supporting back ground for the coreopsis. Mixed centaureas with their gray foliage require the addition of a strong tone to individualize them in bouquets and that should give a hint to arrangement in the growing. The colors of these mixtures in a mass harmonize by proper contrast with

the shining yellow of the coreopsis and its dark stems and bright, though scant, foliage. Then the whole is "dressed up" by the pure white and delicate green of the sweet alyssum. The flowers of all these should be cut daily to insure constant bloom.

R. A. H.

GREENHOUSES.

Many correspondents making requests for information about greenhouses and conservatories are answered by letter and



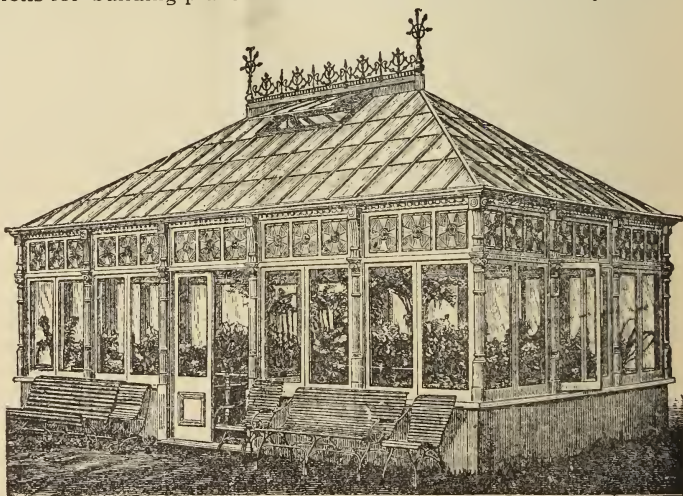
are referred to such sources as will best aid them in the desired manner. From time to time directions for building plant structures of different kinds have appeared in these pages. To satisfy numerous inquiries a number of illustrations are here presented of a variety of styles, some cheap and plain, some expensive and ornamental. The following letter received a short time since is a sample of many which arrive:

Will you kindly give a plan for building a small greenhouse, as inexpensive as possible; also tell me the best and cheapest manner of heating the same, soft coal being the most available and cheapest fuel here. The house to be about 20 feet long. By giving the desired information in an early number you will greatly oblige X.

In building a plant house the first consideration is to adapt it in form, size and details of structure to the use it is intended for. The simplest form of enclosure for growing plants is a hand glass or bell-glass which is placed over one plant or more to increase the warmth of the included air on cool, cloudy days, and to protect from cold during the night and the cooler hours of morning and evening; on warm days and bright ones the glass is removed during the warmest hours.

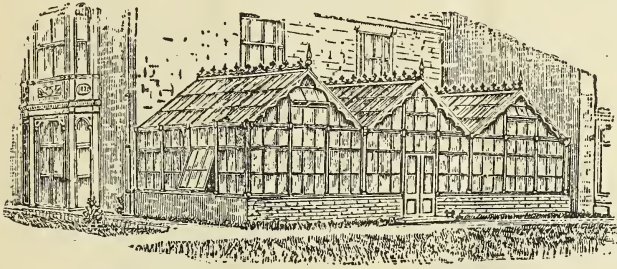
Some of the essential features of plant-growing under glass are secured by this simple utensil. An advance upon the hand glass is the frame covered with sashes placed over a garden bed wherein plants of many kinds are raised—this is the cold-frame. The cold-frame answers an excellent purpose

in spring and summer and is easily regulated. The hot-bed which is merely a frame covered with sashes and placed on



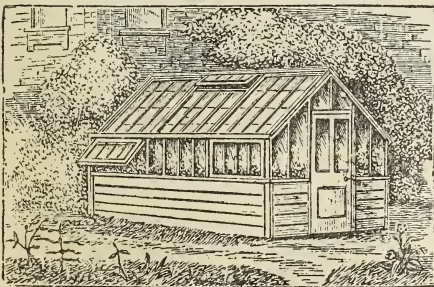
a prepared bed of manure, which by its heat warms a few inches of soil spread over it, requires more care and skill in its management. One great difficulty in the

use of bell-glasses in covering plants in the open ground is the high temperature to which the enclosed air may be heated by the sun. If the glasses happen to be forgotten and are left close over the plants



3

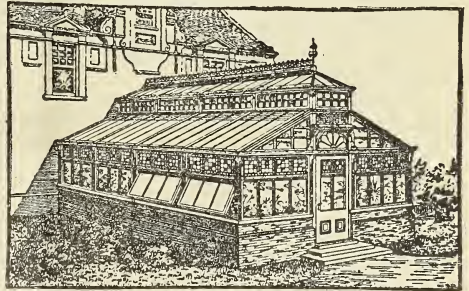
during bright sunshine the heat may be so great as in a short time to destroy the plant or plants. There is the same trouble with the cold-frame and the hot-bed, though with these the air space is greater and injury does not so quickly ensue; but many a gardener has spoiled a whole frame of choice plants by two or three hours of inattention. In working in the cold-frame and hot-bed one is obliged to bend over and work always in a stooping position, which in time becomes very fatiguing. The idea of raising the frame and making sides to it very naturally suggested itself; so the first greenhouses were built in this manner, a form of which is called the lean-to and is shown in number 6 of the illustrations. It is a form well adapted to some purposes, and for a long time was almost wholly used. It is easy to see what an improvement this is over the low frame. One can move about and do his work in



5

it easily; the amount of air space is far greater, and the danger of overheating by the sun's rays is lessened. Ventilators on the top are provided to open upwards to allow the regulation of the temperature.

After many years of use it was found almost impossible to raise symmetrical plants in these houses. They became one-sided from the fact that they received light only from one side; great care was required to keep them turned from day to day to overcome the difficulty, but at best this remedy was only partial. It was evident the light must enter the structure from all sides. Probably one reason why the lean-to structure was adhered to so long was that in England it had been customary to raise the more tender fruits, such as vines, peaches, apricots, etc., on walls because protection was thus given from cold winds and some heat was gained by reflection. It is easy to see

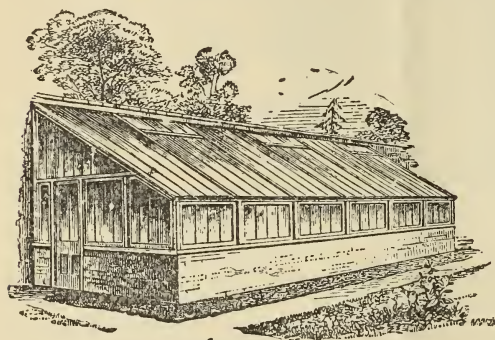


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that these advantages were sought to be secured in greenhouse building. The development of plant structures is due to English gardeners, for they, more than any others, experienced the need of them and adapted them to their use extensively. A modification of the lean-to is shown in illustration 7, a form called a three-quarter lean-to. This is an improvement, but the perfect form is reached only with the double span-roof, as shown in number 8 of the illustrations. A span-roof house should, if possible, stand north and south, thus securing the greatest amount of light and sun heat at all hours of daylight.

The first mode of heating consisted of a brick enclosed fire space with a grate from which proceeded a horizontal flue, raised three or four inches from the ground surface, all around the enclosed room near the wall, passing along one side and one end and returning on the other side, and

then rising perpendicularly through and above the roof. Wood, and afterwards coal, was used for heating. At present in most structures the heat is distributed by means of hot water flowing through pipes which are carried around the inside of the house at the base of the wall. Within a few years steam has been employed for

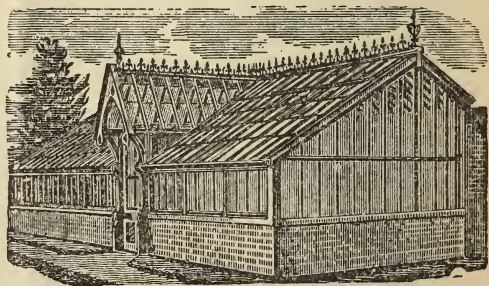


heating but, except in the case of large ranges for commercial purposes, hot water heating is found most economical and most easily managed.

Several of the illustrations are of conservatories, buildings which, either standing alone or connected with residences, are used for the purpose of displaying plants and preserving them in health while in bloom and in their best condition—they having passed their earlier stages in greenhouses, or stoves as the warmer heated structures are called. Sometimes the house is divided into compartments, the different rooms being devoted to these various purposes. Illustration number 3 shows a form which readily lends itself to these different uses; it also is a fine example of building against the wall of a house without cutting off the light of the windows of the lower story, and of also securing the benefits of the span-roof form. Illustration number one is that of a large and elegant structure close to or attached to a residence. A handsome ornamental house is shown in illustration 2. This house is adapted to conservatory uses, allowing quite large plants to stand in the central part of the room and even large plants in almost any part. Number 4 shows a handsome ornamental attached greenhouse, and number 5 one which is smaller and quite plain. This last house detached

would be one of the simplest and most economical to build. The base of the house is wood, while the others are represented on brick foundations. A house eight feet wide will allow of a bench or table three feet in width on each side and at the far end and a central walk of two feet. A house sixteen feet wide can have

the side tables as above and a central one six feet wide with a walk on each side of it of two feet. A house sixteen feet wide and twenty feet long will answer the requirements of the correspondent whose inquiry has been given. Such a house, being nearly square, could be heated more easily, and the heat could be more evenly maintained than one narrower. Houses twenty by forty or fifty feet are of very good form. When the house is constructed of wood the best way is to set good cedar posts, five or six inches in diameter, four feet apart along the lines of the walls. The posts should be set three feet deep so as to be below the action of frost. Board up on each side with one-inch matched stuff to the desired height, saw off the posts evenly and place a two or three-inch plank on top as a plate. The plate should be beveled on the inside to allow water to run off. If the posts are six inches the plate can be eight inches wide. The height of the wall depends upon the way the wall is to be finished; if there is

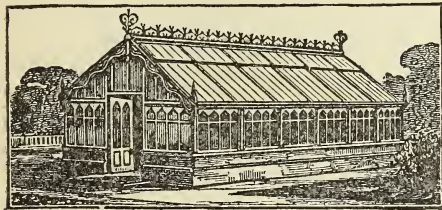


no side glass, as may be the case, but the wall rises quite to the eaves, the wall can be made four feet six inches high; if a tier of glass is to be placed above the wall the latter need be only three feet high. A good height for the side tables is two feet eight inches.

The whole roof structure should be made with the view of obstructing as little as possible the passage of light. The

rafters, made of sound pine, need to be only three inches wide and an inch and a quarter thick when finished and can be placed six feet apart. Glass twelve by twenty inches is a good size. A ridge-pole through the center of the roof is very essential and can be supported on posts. For a large building, or one forty or fifty feet in length, it should be six inches wide and three inches thick; for smaller houses it can be one inch narrower. It should have a shoulder cut along the whole length of each side of it on which to rest the upper ends of the sash bars.

Before commencing to build and after



8

the size of a house has been decided upon, it would be well to make arrangements for its heating and to learn what size pit will be needed for the furnace and boiler. The pit will require to be stoned up, and it must be where the drainage from it will be perfect. The necessary heating apparatus, boiler, pipes, etc., are made by different firms, who will place them in position ready for use. Dealers in greenhouse supplies will also furnish ventilating apparatus by means of which all the ventilators can be opened or closed by a single movement, a matter sometimes of considerable importance in a heavy wind storm. There are many other points in the construction of a house that cannot here be described, but most of them will suggest themselves and be provided for.

SUCCESS WITH ROSES.

I have been a constant reader of your charming MAGAZINE ever since the first number was published, so it is like a dear friend to me. Lately you have had so many communications in regard to the cultivation of roses that, though only an amateur in the art, I feel inspired to write and tell you of my success.

Last spring I sent for your set of summer blooming roses. In due time they arrived, and fine healthy young plants they were. I planted them in a deeply

spaded bed, which had been well manured, and they never stopped for anything, but grew right along. My husband insisted on not allowing them to bloom, in order to strengthen the plants. Well, I just found it almost impossible to keep those roses from blooming. They insisted on showing what they could do. One day late in the fall I went out and picked off thirty-five young buds and fifteen of the most exquisite half-blown roses I ever saw. They have stood the winter well with but little protection, and this summer I expect great pleasure from my roses, and to every lover of roses I would say get Vick's set of summer blooming ones.

Now I have told you all about my roses, and although I do feel ashamed of the length of my letter, I will trespass a little more on your patience. *As you are so kind about answering questions through your MAGAZINE I will ask you to tell me a little about the planting and raising of peanuts, and also to give me the names of a few honey producing shrubs.

MRS. C. G. RIND.

*[Perhaps some one of our readers at the South, accustomed to raising peanuts, will give the information here asked. And will not bee-keepers name the best shrubby honey plants? And probably at the same time a list of all the best honey plants would be desirable.—ED. MAG.]

VALOTTA-AMARYLLIS-BEGONIA.

Please answer the following questions in your MAGAZINE and much oblige an old subscriber:

1. I have three Amaryllis Valotta bulbs that have been large enough to blossom for three years, but they do not. I have them potted in just such soil as you recommend. The bulbs set partly out of the soil. Is that the right way to do it? Should the small bulbs be taken off?

2. I have an Amaryllis Atamasco bulb; how should that be planted? I want it for a pot plant. Shall I cover the bulb all over with the soil?

3. How deep should Tuberous Begonias be planted? I have excellent luck with most all kinds of plants, but with these bulbs it is a failure.

H. K. COLBURN.

The Valotta bulbs mentioned will probably bloom this season. Take away the young bulbs but do not disturb the roots of the old bulbs. The young ones can be planted in the garden for the summer. It is all right to have the upper part of the bulbs in pot appear above the surface.

Bulbs of Amaryllis Atamasco are set so that only the neck is above the surface of the soil.

Tuberous Begonias can be covered about an inch deep.

POTATO ROT.

Experiments, both in Europe and this country, show that the potato rot can to a great extent be prevented by the use of sulphate of copper solutions. The Bordeaux mixture is the most efficient form. Reports of its use have been made from Germany, France and this country, and all agree that it can be used with great benefit, and with profit, when the blight is troublesome. An engraving herewith, made after one which appeared in the *Gardeners' Chronicle*, represents a plant destroyed by the disease, and another one saved, by the use of the Bordeaux mixture.

In this country, CLARENCE M. WEED, of the Ohio Experiment Station, made a report in 1889, of his use of the mixture on potatoes. He sprayed fifteen feet in length of twenty rows of potatoes, using it

cold water, but it takes several hours to do so. With warm water it dissolves quickly. Place twelve pounds copper sulphate in one of the tubs and pour on it ten or twelve gallons of hot water and stir it until the water is blue; then pour this water into an empty barrel; if it is found that some of the sulphate is not dissolved pour more hot water on it and stir as before until no portion of the crystals remains undissolved, and add this to the other blue water. Now, take eight pounds of fresh quicklime and slack it in one of the tubs; after slacking add enough water to make a thin whitewash of it. Place a gunny sack, or some material that will serve as a strainer, over the barrel containing the blue water, and strain the lime water slowly into it. After all has passed through with the exception of the sticks, straws or coarse pieces of lime-



THE POTATO BLIGHT.

Plants growing side by side; one treated with Bordeaux mixture, the other not. From a photograph.

four times, viz.: May 28, June 6, June 29, and July 16. By comparing the yield from twelve and a half feet of the sprayed portion of the rows with the same amount of the unsprayed, the former gave 244 lbs. of marketable tubers against 180 lbs. from the latter; a gain computed to be over 62 bushels per acre, and the tubers from the sprayed portion were smoother or less scabby.

The Bordeaux mixture.—The formula for this preparation is six pounds of copper sulphate and four pounds lime to twenty-two gallons of water.

To make about a barrel of the mixture, use twice the above quantities. For preparing the substance it is best to provide three good barrels which will hold water; saw one of them in two, making two tubs. Use one barrel for holding water, and place all of them near where the mixture is to be used.

The sulphate of copper will dissolve in

stone, remove the strainer and add water until the barrel is filled within five inches of the top. Stir the whole well and it is ready for use. This is the mode of preparing the Bordeaux mixture for whatever purpose it is to be used.

CUCUMBERS FOR PICKLES.

The variety of pickles is numerous, but the pickle which commends more respect than all others, is the little green cucumber. Without entering on the discussion of the sanitary view of pickles in general, or the cooling cucumber in particular, it seems evident people will have and eat pickles of some kind; and it is most generally the cucumber.

Those who make pickle-growing a regular part of the crop rotation, do not plant the seed before the middle of June and not later than the 10th of July; preferably before the 25th of June. Planted at this time the plants come into bearing in Au-

gust and September. Two advantages are gained by late planting, the cooler nights of late summer are favorable to productiveness, and the ravages of the striped bug are mainly escaped.

A moist soil is essential to raising cucumbers in their highest excellence. The cucumber runs its career in about ten weeks from planting the seed, so the ground needs to be well cultivated and enriched. It is a hopeless case to expect a good crop of cucumbers from hard, poorly prepared soil. Give the plants a generous amount of fine, decomposed manure in the hill; and a sprinkling of phosphate after they are half grown, makes them antic in the race for distinction. I think it has been proven that the cucumber patch can be fertilized cheaper with stable manure and a good proportion of chemical fertilizer mixed, than depending wholly upon barn dressing.

As soon as cucumbers of marketable size appear these should be picked, as leaving them upon the vines exhausts the latter to the detriment of the crop. Where sufficient help can be procured for daily pickings, and if properly cared for, near a ready market, a crop of cucumbers for pickles is one of the most profitable crops a farmer can raise. A selection of the most suitable varieties, as in other specialties, is of much importance. Green Prolific is the first variety to name for pickling. Early Cluster comes next, then Cleveland Pickling, Early Russian, Early Frame and Boston Pickling.

L. F. ABBOTT, *Lewiston, Me.*

OUR LANDSCAPE ART.

The following extract from a letter from ALEXANDER MCKENZIE, superintendent of Epping Forest, England, is undoubtedly a very proper criticism of American landscape art, as exemplified in some of the best places in the country.

Last year during June and July I paid a short visit to your grand country in which nothing gave me so much pleasure as the richness of your foliage. I would that I could have prolonged my visit, so as to see all the grandeur of your autumn tints.

I was greatly pleased and somewhat disappointed with your landscape gardening. Pleased with your love for the art, but disappointed at what, from our old-fashioned views, I considered a mistake, namely, the utter want of animal life in the views from some of your homesteads. Many of your merchant's homes I visited comprised from twenty to one hundred acres, and every acre under the mowing machine; and many of the plantations so arranged as to ob-

scure the distant views of the surrounding landscape—in many cases so arranged as even to obscure a lovely vista of their own grounds. Here we try to introduce as much animal life as possible, and to take advantage of as much of the beautiful of other properties as we can. * * * * That which I admired is much too extensive to enumerate in a letter, and will ever lend a great charm to that which was one of the most enjoyable and instructive holidays I ever had.

ROSE CLOTILDE SOUPERT.

Our colored plate this month represents the new rose Clotilde Soupert, an account of which was given in these pages two years since, soon after it was sent out. This variety originated by Soupert and Notting, of Luxemburg, is a cross between the Polyantha variety, Mignonette and Madame Damaizin, a Tea. It is a vigorous plant and most abundant bloomer, and the flowers are produced continuously for a great part of the summer and autumn. The flowers are of good size and very fragrant, in this respect as well as in the delicacy of its coloring, tracing to its Tea origin; on the other hand its profuse blooming habit is inherited from its Polyantha source. The outer petals are at first a pure, pearly white and the central ones rose shaded with a soft carmine. This variety is recommended for planting in masses or beds and for winter forcing and, also, as a window plant. It is a fine acquisition and must soon become a great favorite.

THE LANTANA A PEST.

Years ago the Island of Oahu, H. I., was greatly troubled with caterpillars, and a Dr. Hildebrand imported the Mynah birds and also the lantana, so that the birds might feed on the berries of the latter. The caterpillars were destroyed, but the birds have carried the seeds of the lantana all over the Island, and the plant is looked upon as a curse in that country, as it spreads in a most alarming manner.

A. BUCHTEN, *San Francisco, Cal.*

PANSY NAME, VIOLETS, DAISIES.

I wish to know how the name of one variety of Pansies is pronounced—the Bugnot. I have an idea that perhaps the third and sixth letters are silent.

I also wish to know if English violets and daisies are as easy to raise and keep over winter as pansies. I have failed with what few I had.

M. A. W., *Sabetha, Kansas.*

Bugnot being a person's name, we know of no rules of pronunciation that will ap-

ply to it, nor do we know how the family that bears the name pronounces it.

The English daisy needs a little protection in winter in this region, and certainly would require it in Kansas. Both English violets and daisies, in Kansas, should receive a light covering of leaves in the fall, or, what is better, the protection of a cold-frame. An instructive and reliable article on the English daisy appeared at page 272 of last year's volume of this MAGAZINE.

A SPRING DROUGHT.

To-day, May 16, we are having here some light showers. Previous to the time only half an inch of rain has fallen in this vicinity in thirty-two days. It is feared that the drought may shorten the hay and grain crops, and affect to some extent strawberries. Garden vegetables have already been much retarded. This is the condition generally in Western New York.

FRUIT NOTES.

All fruit trees have blossomed freely. The apple trees are now carrying a full load of bloom. The present year will give the opportunity for crucial tests of the practice of spraying apple trees with arsenites for codlin moth and copper sulphate for the apple scab, *Fusicladium dendriticum*, which infests the leaves and fruit. Undoubtedly some enterprising fruit growers in different parts of the State will use these remedies, while many orchards will be left to their fate, and the possibility is that we shall learn something in regard to these operations which will give us satisfactory guidance in the future. We have reason to think that the position which our State has heretofore held as a fruit region will be maintained.

The spring weather for several seasons has been unfavorable to our fruit interests and with this there have appeared new insect and fungus enemies, but the ability to master them is, apparently, in our power. The fruit-growers now need courage, perseverance, and a determination to overcome the obstacles which oppose them, and these qualities, it is believed, the most of them possess.

A frost on the 5th of May has injured some vineyards which are remote from water protection, and, as far as can be

learned at this time, the effect will be to shorten somewhat this season's crop of grapes. Last year the vintage was unusually large, a smaller one may be expected this fall.

Cherry and plum trees appear to have set good crops of fruit; how much of it they will carry to maturity depends on the weather from this time. Peaches look promising.

With timely rains now we may expect good supplies of all the small fruits, for they are all setting heavily. On the whole, therefore, the fruit outlook is much better than at this time last year.

JUNE.

When all the air is soft and calm,
And e'en the aspen leaves are still;
When fragrance from the flowers, like balm,
The drowsy senses seems to fill;
When hangs the sun amid the sky
And cattle in the shadows lie;
When e'en the thrush's cheerful note,
Seems stifled in the tuneless throat;
Then, dozing on the turfy ground,
I hear the ravishment of tune,
The harmonies of perfect sound,
The low, sweet melodies of June.

The bee upon the droning wing
Sings honeyed staves from bud and flower,
A constant hum that seems to cling
Round the deep silence of the hour;
By fits and starts through the tall grass
The stridulous cicadas pass;
While from th' embattled files of corn
The ploughman's voice subdued is borne—
Bucolic strains forever found
In perfect chord with summer noon,
By lips of Plenty softly wound
From the year's pinnacle of June.

Among the glintings of the leaves
I spy the redbird's flaming vest,
And hear his crooning as he weaves
The texture of his curious nest;
Perched on the weatherbeaten rail
Whistles with liquid note the quail,
While in the elm the amorous dove
Pours forth the story of his love.
Let shepherds tune the oar to May,
For me, I love a warmer rune,
The varied stops of that warm lay
Blown on the wheaten quills of June.

O that such day would ever last,
Thus softly gracious and serene;
Would all discordant notes were past
And joy immortal filled the scene!
And O for lips that ne'er shall know
The measures Want and Sorrow blow;
For hearts that deem the joys in store
Shall far surpass all gone before.
Perennial then should glow the heart,
Glad heaven would frame the soul in tune,
With love the theme in every part,
And all the months would sing like June.

E. B. H.

OUR YOUNG PEOPLE.

PRUDY, THE FAITHFUL.

Out of doors, the dandelions' golden discs were at their thickest, the sky was at its bluest, the clouds their fleeciest, the children's heels the springiest and their shouts the merriest of at any time in the year. The elixir of the spring season was in earth, air and sky.

But, in-doors, there was one anxious heart that the subtle charm of the season had not reached. Dear old Mrs. Sprague, so sweet and saintly that for years she had expressed herself as ready and only waiting for the final call, had suddenly become absorbed in the question of how to prolong her life to the greatest possible age. The motherless grandchildren, to whom she gave a sheltering home, and faithful old Prudence in the kitchen who took care of them all, could not understand it.

Myra up-stairs, and Rupert in the garden were both pondering over it this moment, while Mrs. Sprague, intent upon a letter just received from her whilome pastor, reaches its conclusion and reads these words: "Do you realize that the robin and the blue bird are here—that spring has come?"

She folded and put away the letter and seated herself by a front window. Sure enough, Spring had come, and for the first time since childhood she had given it no special thought. She remembered vaguely of having heard bird-notes within the week as something far away—outside of her life. She had been too absorbed in watching for new indications of decreasing vitality, and in seeking counter-acting remedies, to have much thought for anything besides. But now her eyes wander over the expanse of grass-green meadows opposite, stretching away and away to the bit of woodland beyond. A stile, reminding of olden times, crosses the fence near by, inviting to a stroll or a romp. She remembers, dimly, having seen, day after day, poor, pinched looking women and children with baskets over there, strolling and stooping at frequent

intervals, and she knows now that they were gathering "greens."

Away in the distance she sees Tommy, Posey and Bess gathering the "spring beauties" that grow so thick as to look—yes, now that she notices, really look like great patches of thin snow. There must be millions of them in a place. No wonder the children have been wild about them! But that is not all. She looks around the room and sees quantities of purple and yellow violets in broad, shallow dishes; while in pretty vases are great bunches of blue bells and cowslips—all from the edge of the woods where Myra and Rupert have found them. Yes, the spring has truly come. And now that Mrs. Sprague comes to think of it, what a blessing to the town children—to everybody—that the villa people over yonder will not sell this stretch of land for building lots. How much its open beauty adds to her own place! Her own? Yes, so people say; always adding—since the father's recent death—that the children will be provided with a good home when she is gone. For the father, though genial and good-hearted, belonged to that large family of Do-littles, and was a "ne'er do weel" in business.

But here come the children racing and screaming over the stile, with the morning's fresh relay of wild flowers. And now they stoop in the grass at their feet to pick some dandelions—they are just too lovely to pass by. (The plants in the meadow had helped to furnish dinners instead of blossoms.) But so lavish of their gold are they, these cosmopolitan flowers, that they scatter their yellow ducats all along the highways. They gem the edges of green that flank the villager's curbstones. They peep into the poor man's back-yard to gladden his children. Very sweet it is of them to thrust up their golden heads in such common places. And such royal gold, too! Nothing can equal it in color; nor can anything equal the silky softness of the blossoms' velvet.

Tommy brushes one against Bessie's cheek, while telling her that by-and-by they will reach high up above the grass and have silver crowns on their heads. Were his poet soul more mature he might tell her that, like all humble doers of good deeds, they would gradually grow into a higher atmosphere until, becoming spiritualized, they would soar away and pass from mortal sight.

But Mrs. Sprague, though all her life a doer of good deeds, is not craving to soar away; she desires above all things to stay right where she is. The sight of Myra as she enters the room dispels all interest in the outside world, and sets her to cogitating on the danger, at her age, of some ailment getting a sure hold unnoticed. But Myra, with her wraps on ready for her daily trip to the near city, sits down to draw on her gloves and rallies her by saying:

"How very well you are looking this morning, grandmamma."

"I'm glad you can see it so, Myra, dear. You don't think, then, that my flesh has a puffy look? Dropsy, you know, is an insidious disease; though it is called the result, only, of disease."

"O, my, no. Your flesh is as natural as mine. Besides, old Mr. Duffy's flesh, it is said, stays indented when a finger is pressed on it, because he is dropsical."

"Yes, I remember. Well, I don't want to imagine ailments, but I must live as long as possible for the sake of you dear children. You, Myra, I love beyond all else in the world and would gladly spare you every privation and trial. You know I can't endure the thought of your ever being a teacher, but should you take such a wild notion when I'm gone I want you to be competent to fill a high position. No plodder's place for you, remember. Are you satisfied with the progress you're making in the polytechnic course?"

"Our teacher seems to be, and he is very ambitious for us. I love the analyzing and dissecting of specimens so well that I never tire of the study."

"Well, dear, I'm thankful it's not irksome to you; but now you must be off. Have you plenty of street-car tickets? Please don't buy them singly."

"Let me see;" and out of her pocket Myra drew a snake skin, porcupine quills, duck's skull, dead lizard, chicken foot,

snake's spine, and last of all a car ticket, a small box and its lid.

"Myra Josephine Sprague! what a disgusting medley."

"I assure you, grandmamma, these are very interesting specimens. I had them nicely packed in this box. A rubber snap is needed to hold the lid on. Now, good-bye, till three o'clock. Rupert will be in to keep you company. And the children's Saturday romp will keep them from troubling you."

Before Mrs. Sprague had settled upon a new train of sombre thought, Rupert came in bright and breezy, saying:

"You've no idea, grandma, how well the garden looks. The early vegetables are making a fine show. So are the borders of perennial flowers. You must take a peep at them to-day, to encourage me, you know."

"Yes, my boy, I must. But I have to be very careful of myself. Last night I could not sleep, as usual of late, and I got to thinking of how many old people have paralysis without a moment's warning and never recover; and the thought of it haunts me yet."

"O, nonsense, grandma; you've always had strong nerves and none of your people ever had paralysis. You used to say we mustn't meet trouble half way. What's become of your religion that used to give you such trusting faith that you believed all would be well with you, no matter what happened to you, nor when it happened, nor where?"

"I did use to believe like that, didn't I? Well, I do yet. But, Rupert, it's not about my own present life nor my future that I'm worrying. It's about you children. You can't understand that it's really necessary for me to live just as long as I possibly can; though I intend to do it, because I know best. But I'll stop talking about it if you'll read to me."

"Just what I was wanting to do. I have some new clippings in my scrapbook that I think you'll like, though they're so short there's a frequent change of subject,—like the woman's borrowed dictionary, you remember, that she declared was full of pretty words, but that the subject changed so often she couldn't keep the run of the story. Well, to begin with the first one:

"Daniel Defoe pronounces begging a

disgrace to any country; it being a shame that a worthy object should be so reduced, and equally a shame that an unworthy one should be allowed to beg.' That's to the point, surely.

"Nile's Register states that the total number of slaves brought from Africa by the United States is 496,000."

"The first cotton and rice raised in the South was from a quart or two of seed planted in a marsh lot on East Bay, Charleston, S. C."

"Here's an item by Mrs. Leavitt that you'll like. She's an all-around-the-world traveler.

"Holland is beautiful, but it is a peculiar beauty. The broad horizon's lofty dome of sky, the wealth of verdure, the picturesque white and spotted cows up to their knees in grass, the profusion of red poppies on the edge of every ditch, and sometimes filling a field, the blue cornflowers below the heads of the ripening wheat, showing themselves on the borders of every piece of grain, whole fields of mustard in full bloom, with the substantial brick cottages always spotlessly clean, certainly are beautiful, if there are no mountains. Paris streets and houses are swept and rubbed till they shine, but Holland streets and houses are washed till they are sweet as well as bright.

"The country is perfectly flat, cut into small fields by deep ditches with a profusion of red poppies on either side. One can—"

"Rupert, my dear," Mrs. Sprague interrupted, without seeming conscious of it, "do you remember to which one it is considered hurtful when an elderly person and a child are in the habit of sleeping together? You know that one of them is supposed to draw vitality, or nervous force, from the other. I forget which way it is. Now, if a young, robust girl could impart strength to me, I've just been thinking how easy it would be to pay one something, for the sake of having her for a night companion. Perhaps you don't remember which way it works?"

"The idea is new to me," answered Rupert, feeling sick at heart with an undefined dread of—he knew not what. Excusing himself he went to the kitchen.

"Prudy," said he, "grandma is certainly off of her balance for some reason.

You stay with her while I go and talk with her physician."

That astute man judged that sleeplessness was probably not a new condition, and was the cause of her anxious mental disturbance. He hoped that the harmless sedative he should send her would remedy the trouble.

Later in the day Myra and Rupert were talking with Prudy on the one absorbing subject, when the latter broke out with:

"Laws, it aint long ago sence your grandma was very pertickeler at bed time to have everything put away jest so, an' her bed kivers folded straight an' even, 'cause she said that a body at her age was liable to drop off in their sleep at any time, an' she wanted to be found with all things 'decent an' in order' a cordin' to scripiter. So, once I told her she ortent to lay plans fer dyin' (when there was nothin' the matter with her) same's she would fer a party; an' she turned on me in her stately way an' said that when a body was eighty years old that was matter enough; an' it was high time to be preparin' to go; an' that she'd lived long enough, if only it pleased the Lord to think so too. An' now she's gone an' got too fur t'other way."

"But she says," added Myra, "it's all on account of us children."

"An' wasn't you children here all along jest the same? An' didn't I promise your own mother I'd always stand by you? It's something else. It took hold of her while your father was sick, an' on account of her age she can't control it. She's all right about everything else."

As time passed on it was found that Mrs. Sprague still got no natural sleep. When anxious regrets were expressed she only said: "There's one consolation in sleepless nights—I sha'n't die in my sleep."

Of course this could not last. One morning she was found asleep indeed. She had doubtless already learned how worse than useless are most of the worries of this life. Afterward, when all was over a sealed letter addressed to Myra and Rupert was found in her desk. It read thus:

"MY DEARS:—In case of sudden change, it is due to you to know that my private fund alone keeps the family together. Without the home you must be scattered.

The enclosed attorney's letter of recent date, notifies you, as it has me, that *at my death* this home will go to the heirs of a long lost—"

"O, I can't read it!" sobbed Myra, "to think of sweet, precious grandmamma loving us so much that she worried herself to death about us. O, it is too pitiful! You finish reading it, Rupert." But Rupert's bowed head was on the table, and Prudy's apron was over her face. Presently Myra chokingly resumed:

"—*at my death* this home will go to the heirs of a long lost brother of my childless uncle-in-law, who willed it to me conditionally, when I became a widow.

"But this is not all. Your dear, improvident father told me on his death-bed, that after your mother's long and expensive illness he had felt obliged to let my life policy expire. (I had long before authorized him to pay the premiums for me regularly.) He, my son, thought he had been justified in doing this, by necessity, as the only way to cancel honorable debts; there being neither brother nor sister to be robbed thereby. So, my dears, you see how it is;—insurance money gone, and the home sure to go at my death. No wonder I am anxious to—['O, how pitiful,' sobbed Myra,] to prolong my life until you two are more matured, and the younger ones less care. But I fear I have worried you with my business. But how *can* I have you turned out homeless! Think of me patiently when I am gone. Good-bye, my darlings all, and good-bye to dear faithful Prudence.

M. E. SPRAGUE."

Myra laid her head on the desk sobbing aloud; Rupert walked the floor with streaming tears. Neither one thought of lost home or insurance money, it was only of the deep, unselfish, yearning love that

had thought only of them during the last months of her life, and they so unsympathetic.

But what was the matter with Prudy? She had dried her tears in unseemly haste, and had rushed off to a certain locked drawer in her own room, and bringing therefrom a long parcel she placed it on the desk and exclaimed:

"Here's your grandmother's Life Policy for \$20,000; an' now it'll come all right to you children. You can buy this home and we can all stay here together, an' it wont seem so dreary as to have the family broke up."

Rupert stopped pacing long enough to read on the long envelope the name, date, amount and "Company." Feeling dazed he turned away. Then said Myra to Prudence: "Can you explain this? you just heard our own father's report of it."

"Yes, I can. At your mother's death your father was prostrated—depended on me to see to things. An' when he told me to take this package and a note he'd writ to the Company's office I just felt it my juty to read that note; an' I did read it; an' went to my room and had a cry about you children. Then I just locked that package in my drawer. Then I went to the Savings Bank where I had \$1,000 saved up for old age, an' I drewed enough money to pay *him* what the note said he'd be expectin', an' enough more to pay the premium. An' I've kep the premiums paid up ever sense; an' that's how it is."

A moment's astonished silence, and then the two listeners rush to Prudy with open arms; Prudy the faithful—evermore to be loved and honored, as she has hitherto been trusted and respected.

There is no caste in true nobility of character.

MARIA BARRETT BUTLER,

THE FLOWER GIRL'S SONG.

The birds were all warbling and trilling;
Their songs seemed so merry and glad;
I sang as I gathered the flowers,
Nor could I be silent and sad.

Buy my blossoms, fragrant blossoms?
Bright pansies, and daffodils too!
At sunrise, down in the garden
I plucked them this morning for you.

While lilies all dewy were dreaming,
And daisies bent low o'er the rills,
From the silvery stream in the hollow
I brought them with ferns from the hills.

Buy my blossoms, fragrant blossoms?

Here are daisies and violets blue;
Down in the cool, breezy meadow
I plucked them this morning for you.

Though angry clouds gather and threaten,
There's music in green fields atune
With bird songs, and burdens grow lighter
Amid the sweet roses of June.

Buy my blossoms, fragrant blossoms?

They'll bring you dreams tender and true;
From forest and hillside and valley
I plucked them this morning for you.

J. F. H.

THE LLAMA.

The Llama is a native of Peru, and an animal of great importance to the Peruvians; it is a beast of burden, and at one time was the only quadruped in the country which could be used for that purpose, taking the place of either horse, ox, or goat; it also furnishes them with food and clothing. In South America the animal is commonly known by several names, Lla-

parts white, while the others vary in color, being white, brown, black, or mottled. The Vicugna is smaller and more slender in form than the Guanaco. It is a wild, timid creature, living in herds on the bleak rocky precipices of the snow-clad mountain tops of Peru and Ecuador, where it climbs the rocks with the greatest agility, for its feet are so formed as to render it possible for them to do so, as beneath each toe is a pad, or cushion. In this as well as the construction of the stomach the Llama is supposed to be allied to the Camel.

The Guanaco, another variety, is a very beautiful creature about the size of the European red deer. It also is a very timid animal and, when frightened, bounds off at great speed.

The Llama, which is domesticated, is supposed to be descended from the Guanaco. It is used by the natives as a beast of burden, and will carry a hundred pounds, or perhaps a little more. If the load is too heavy, or the animal too tired, it will lie down and nothing will induce it to go further on its journey, and if urged it will turn and spit in the face of its driver. The pack must be removed from its back before it will move.

The flesh of the Llama is good for food and the skins and wool for clothing. The Alpaca is thought to be of the same variety as the Vicugna, but in a domesticated state. It is not used as a beast of burden, but is noted for its wool

which is abundant, long and fleecy, and for this reason the Alpaca sheep are highly prized.

M. E. B.



ma, Alpaca, Vicugna and Guanaco. The Llama and Alpaca are domesticated, but the Guanaco and Vicugna are wild. These last are of a light brown color, the under

A JUNE EVENING.

The sun goes down, the evening breeze
Comes lulling nature into rest.
And, gently sways bloom-laden boughs
That safely cradle many a nest.

The round full moon lies in the East
And myriad cloudlets round her play

And night with jewels on her brow
Has closed upon a golden day.

On such a lovely eve as this
The heart to hope should have new lease,
Cast sordid care away, and be
With all the world, and self, at peace.

MRS. M. J. SMITH.

EDITOR'S MISCELLANY.

LAWSON VALENTINE.

The death of this well-known New York manufacturer occurred on the 5th of May, at Houghton Farm, Orange County, after a short illness. Mr. Valentine has for many years been interested in rural pursuits, and from the operations of a broad and generous mind devised many good schemes for American agriculture which have only been partially consummated. At one time he was peculiarly interested in the *American Agriculturist*; last year he purchased a large share in the Rural Publishing Company, of which he was president at the time of his death. In its issue, of May 16, in a short account of his life and death, *The Rural New Yorker* says: Now that he has gone from among us, we believe that his memory will long remain fresh and green in the hearts of thousands of progressive farmers who appreciate his noble efforts for the elevation of their calling.

THE BIOGRAPHY OF DIO LEWIS, A. M., M. D. By Mary F. Eastman. Fowler & Wells Co., New York.

A very good account of the life work of Dr. Lewis who was a power in the community for the welfare of mankind in many ways. His special work was physical culture, and the attention which is given to this subject now in many of our educational institutions is due in a great measure to the advancement which he gave the cause in his work from 1853 to the time of his death in 1886.

HOW TO MAGNETIZE.

A small brochure, by James V. Wilson, and published by the Fowler & Wells Co., in the interest of therapeutic art.

FUNGUS DISEASES OF THE GRAPE AND OTHER PLANTS AND THEIR TREATMENT. By F. Lamson-Scribner. Published by J. T. Lovett Company, Little Silver, N. J.

Mr. Lamson-Scribner who is a well known authority on the subject which he here treats embodies in a book of some 150 pages a scientific account, in popular style, of several of the most troublesome fungi which prey upon our vines and fruit trees. The special subjects are the Black Rot, the Bitter Rot, the White Rot, the Brown Rot and the Powdery Mildew of the Grape, the Grape Leaf Blight, the Root Rot of the Vine caused by two species of Fungus, Anthracnose and Bird's Eye Rot of the Grape, Black Rot of the Apple, Apple Rust and Cedar Apples, Apple Scab, the Leaf Blight of the Pear, the Plum Rot, Black Knot of the Plum and Cherry, Leaf-spot Disease of the Plum and Cherry, Powdery Mildew of the Cherry, Peach-Leaf Curl, and Raspberry Anthracnose.

These subjects are all carefully considered, the fungi particularly described and the best mode of treatment indicated. The book is an excellent manual for the fruit grower, who should consult it and follow its advice.

REPORT OF THE SECRETARY OF AGRICULTURE, 1890.

The present volume appears to be a valuable collection of papers from the different Divisions, and it is a pleasure to see it so promptly issued. It comes to us so late that no notes from it can be made for the present month, although we see much in it that will be interesting and valuable for farmers and fruit growers, and which we hope to refer to more particularly at another time.

OTHER PUBLICATIONS RECEIVED.

Notes on the Nepenthaceæ or Pitcher Plants, by Geo. Russell, from the Natural History Society of Glasgow.

On Horticulture, Villa Gardening and Open Spaces in Large Centers of Industry, by D. M'Lellan, Superintendent of Public Parks, Glasgow. From the Proceedings of the Philosophical Society of Glasgow.

Meteorological Notes and Remarks upon the Weather During the Year 1890, With its General Effects Upon Vegetation, by D. M'Lellan.

Treatment of Nursery Stock for Leaf-blight and Powdery Mildew, by B. T. Galloway, being Circular No. 10 of the Division of Vegetable Pathology, U. S. Department of Agriculture.

U. S. Department of Agriculture, Division of Entomology, Bulletin No. 7. The Pediculi and Mollusca Affecting Man and the Lower Animals, by Prof. Herbert Osborn.

Journal of the Columbus Horticultural Society, No. 1, of Volume VI, March, 1891, has a portrait of Prof. Norton S. Townshend, and several good papers.

REPORTS FROM AGRICULTURAL EXPERIMENT STATIONS.

Third Annual Report of the Storrs School Station, Storrs, Connecticut, 1890.

Annual Report of the State Station, Amherst, Massachusetts, 1890. We note with particular interest the Report by Prof. James Ellis Humphrey of the Department of Vegetable Physiology; also, the Report of Experiments With Field and Garden Crops, and experiments to study the economy of using different commercial sources of Phosphoric Acid for manurial purposes in farm practice.

Massachusetts, Amherst, Mass., Bulletin No. 39. Treatment of Fungous Diseases.

Oregon, Portland, Oregon, Bulletin No. 11. Notes on Grapes and Potatoes.

North Carolina, Raleigh, N. C., Bulletin No. 76. Plant Diseases and How to Combat them.

Cornell University, Ithaca, N. Y., Bulletin No. 26, Hort. Division. Experiences with Egg Plants.

Pennsylvania State College, State College, Pa., Bulletin No. 15. Ensilage Corn.

Vermont, Burlington, Vt., Bulletin No. 23. Analysis of Fertilizers.

Michigan Agricultural College. Education at the Michigan Agricultural College, by President O. Clute.

THE SANITARIUM AT WARSAW.

A short visit recently to the new sanitarium at Warsaw, N. Y., produced a very favorable impression of its value as a place to recuperate, and to rest and strengthen tired nerves. The establishment is situated some forty miles from Rochester on the hills overlooking Warsaw and the valley of Wyoming County, through which the eye can range for a distance of fifteen miles. It is a lovely spot in the midst of beautiful scenery where the air is pure and bracing and springs of the purest water flow out from the hillsides. The buildings and their furnishings are all that can be desired. Salt baths are the special feature of the place and to these the proprietor, Dr. John C. Fisher, has given particular attention, having visited and examined in detail all the principal saline baths of Europe. Dr. Fisher and his pleasant wife are most agreeable entertainers and we know of no spot where health may be more pleasantly or successfully wooed.

THE FIRST FRUITS

Of Summer are cherries. Cool, sweet, and juicy,—few children are able to resist the temptation of plucking them, if anywhere within reach. The peculiar flavor of this delicious little fruit is found in



Ayer's Cherry Pectoral

and, no doubt, is one cause of the popularity of this well-known medicine. As a cure for the sudden throat and lung troubles, from which no child is ever secure,—croup, whooping cough, lung fever, etc.,—Ayer's Cherry Pectoral is unsurpassed, and well deserves to be called "a household blessing."

"Ayer's Cherry Pectoral is, to me, a household blessing, and for fully twenty years I have never been without it in my family. Traveling, as I do, hundreds of miles per week, amongst my different offices, from New York to the Gulf of Mexico, experiencing sudden changes of climate every few hours, I have found, when so exposed, Ayer's Cherry Pectoral a great relief. I would not be without it, if it cost five dollars per bottle, and only wish others were as well aware of its benefits as I am myself."—C. LEWIS DUNLAP, 113 W. Lombard st., Baltimore, Md.

"In raising a family, I have frequently had occasion to use remedies for colds, coughs, croup, etc., and am familiar with most of the preparations recommended for the cure of that class of complaints. Ayer's Cherry Pectoral easily takes the lead of them all. I use no other."—GEORGE W. MORIARTY, Opelousas, La.

Ayer's Cherry Pectoral

Prepared by Dr. J. C. Ayer & Co., Lowell, Mass. Sold by Druggists.

A HEALTHY APPETITE

With perfect digestion and assimilation, may be secured by the use of Ayer's Pills. They act healthfully upon the liver and stomach, stimulate the gastric juice, expel effete matter from the bowels, and impart tone and vigor to the whole alimentary canal. Ayer's Pills, being a mild but effective cathartic, are the best family medicine and unequalled for the relief and cure of costiveness, distress after eating, dyspepsia, biliousness, heartburn, flatulency, and sick headache.

"For a long time I was a sufferer from stomach, liver, and kidney troubles, experiencing much difficulty in digestion, with severe pains in the lumbar region and other parts of the body. Having tried a variety of remedies, with only temporary relief, about three months ago I began the use of Ayer's Pills, and already my health is so much improved that I gladly testify to the merits of this medicine."—M. J. Pereira, Oporto, Portugal.

Ayer's Cathartic Pills

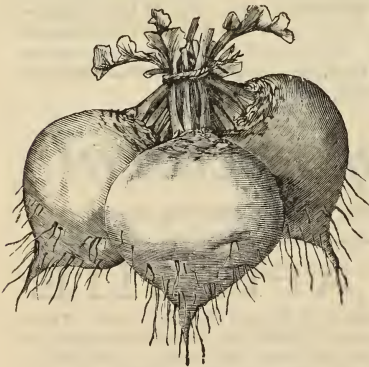
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TURNIP SEED.



STRAP LEAF.

- Turnip, Early White Flat Dutch**, size medium; grows quick; lb. 60 cts.; oz., 10 cents, 5
- Early Yellow Dutch**, one of the best for the garden; per lb., 60 cts.; per oz., 10 cents, 5
- Strap-Leaved, White-Top**, roundish, of medium size; one of the best, either for market or family use; per lb., 60 cents; per oz., 10 cents, 5
- Strap-Leaved, Purple-Top**, similar to above, purple above ground; per lb., 60 cents; per oz., 10 cents, 5
- Purple-top Globe**. An improved variety of the purple-top flat turnip. Globular in shape, of fine appearance, a good keeper, of excellent quality, and equally desirable for table or stock. Per pound, 60 cts.; ounce, 10 cents, 5
- Extra Early Milan**, new white variety, purple top and strap-leaf. It is full as early as the Purple Top Munich, and far superior to that variety. Remains in good condition a long time; per lb., 80 cents; oz., 10 cents, 5



WHITE SWEDE.

- White Globe**, large, white; fine for field culture; per lb., 50 cents; per oz., 10 cents, 5
- White Norfolk**, a popular variety for feeding; per lb., 50 cts.; per oz. 10 cents, 5
- Jersey Navet**, a delicate, white Turnip, long, somewhat like the Parsnip in form; one of the best for the table, very sweet; per lb., 80 cts.; per oz., 10 cents, 5

- Long White Cow Horn**. Matures very quickly; roots carrot-shaped; about half above ground; flesh white, fine grained, sweet, and of excellent quality for table use. Per lb., 75 cents; oz., 10 cents 5
- Orange Jelly**, a very beautiful yellow Turnip, one of the very best yellows for the table; per lb., 70 cents; per oz., 10 cents, 5
- Yellow Globe**, an excellent smooth, yellow, round Turnip, of large size; known in some places as Golden Ball; lb. 60 cents; o. 10 cents, 5



PURPLE TOP SWEDE.

- Green-Top Yellow Aberdeen**, excellent, per lb., 60 cents; per oz., 10 cents, 5
- Sweet German**. This celebrated Turnip is white, sweet, a long-keeper, and generally solid until mid-summer. It should be sown as early as the Swedes; per lb. 60 cents; per oz. 10 cts., 5
- Seven Top**. Sown in the Southern States in the fall for Turnip Greens. Per lb., 60 cents; oz., 10 cents 5

RUTA-BAGA, OR SWEDE TURNIPS.

- Ruta Baga, White Sweet**, a large, white, solid Swede, sometimes called White Russian; per lb., 60 cents; per oz., 10 cents, 5
- White Red-Top**, a French Swede, with reddish purple top, sweet and solid; lb. 60 cents; per oz. 10 cts., 5
- Green-Top**, a round, solid, sweet variety, very productive; per lb., 60 cents; per oz. 10 cents, 5
- Laing's Purple-Top**, an old and favorite variety, good keeper, solid and productive; per lb., 60 cents; per oz., 10 cents, 5
- Carter's Imperial Purple-Top**, claimed to be the best Purple-top grown; very hardy; per lb., 60 cents; per oz., 10 cents, 5
- Skirving's Liverpool**, good quality, and of medium size, very solid and sweet; supposed to be the best for a shallow soil; per lb. 60 cents; per oz. 10 cents, 5
- Hall's Westbury**; one of the finest purple-top Swedes in cultivation; good for table, or for stock; per lb., 60 cents; per oz., 10 cents, 5

At the above prices the Seeds will be delivered free.

JAMES VICK SEEDSMAN, Rochester, N. Y.

HAIR ON THE FACE, NECK, ARMS OR ANY PART OF THE PERSON QUICKLY DISSOLVED AND REMOVED WITH THE NEW SOLUTION

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AND THE GROWTH FOREVER DESTROYED WITHOUT THE SLIGHTEST
* * * * * INJURY OR DISCOLORATION OF THE MOST DELICATE SKIN. *



Discovered by Accident.—In Compounding, an incomplete mixture was accidentally spilled on the back of the hand, and on washing afterward it was discovered that the hair was completely removed. We purchased the new discovery and named it MODENE. It is perfectly pure, free from all injurious substances, and so simple any one can use it. It acts mildly but surely, and you will be surprised and delighted with the results. Apply for a few minutes and the hair disappears as if by magic. It has no resemblance whatever to any other preparation ever used for a like purpose, and no scientific discovery ever attained such wonderful results. **IT CAN NOT FAIL.** If the growth be light, one application will remove it permanently; the heavy growth such as the beard or hair on moles may require two or more applications before all the roots are destroyed, although all hair will be removed at each application, and without slightest injury or unpleasant feeling when applied or ever afterward. MODENE SUPERCEDES ELECTROLYSIS.

Recommended by all who have tested its merits—Used by people of refinement. Gentlemen who do not appreciate nature's gift of a beard, will find a priceless boon in Modene, which does away with shaving. It dissolves and destroys the life principle of the hair, thereby rendering its future growth an utter impossibility, and is guaranteed to be as harmless as water to the skin. Young persons who find an embarrassing growth of hair coming, should use Modene to destroy its growth. Modene sent by mail, in safety mailing cases, postage paid, (securely sealed from observation) on receipt of price, \$1.00 per bottle. Send money by letter, with your full address written plainly. (Correspondence sacredly private.) Postage stamps received the same as cash. (ALWAYS MENTION YOUR COUNTY AND THIS PAPER.) Cut this advertisement out.

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We furnish everything. We start you. No risk. You can devote your spare moments, or all your time to the work. This is an entirely new lead, and brings wonderful success to every worker. Beginners are earning from \$25 to \$50 per week and upwards, and more after a little experience. We can furnish you the employment and teach you FREE. No space to explain here. Full information FREE. **TRUE & CO., AUGUSTA, MAINE.**

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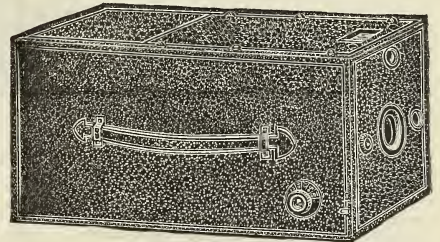
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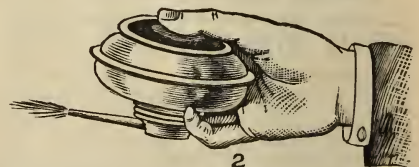
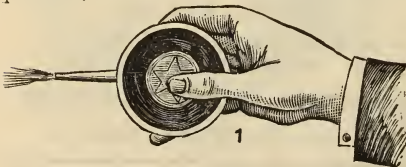
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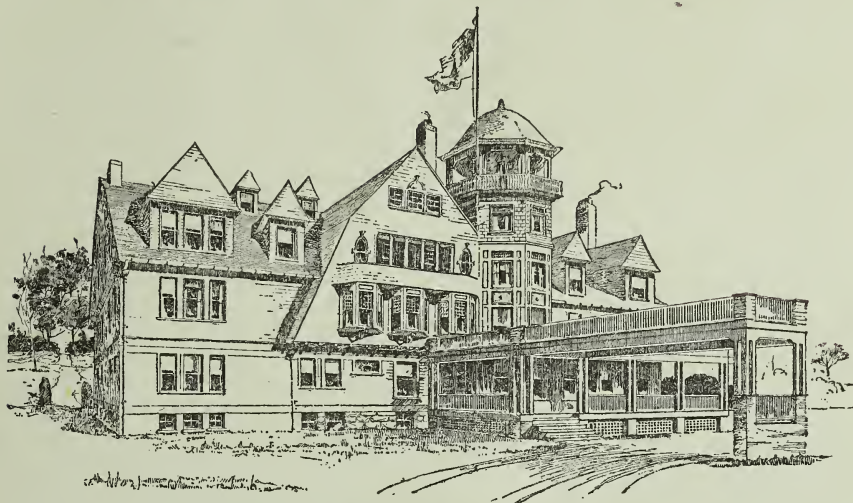


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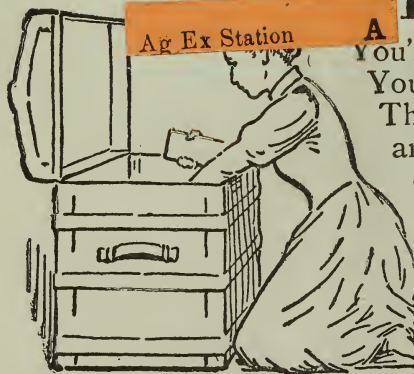
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Vol. 14.

No. 8

Vicks
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Monthly
MAGAZINE.

AUGUST, 1891

Published by JAMES VICK, SEEDSMAN, Rochester, N. Y.

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
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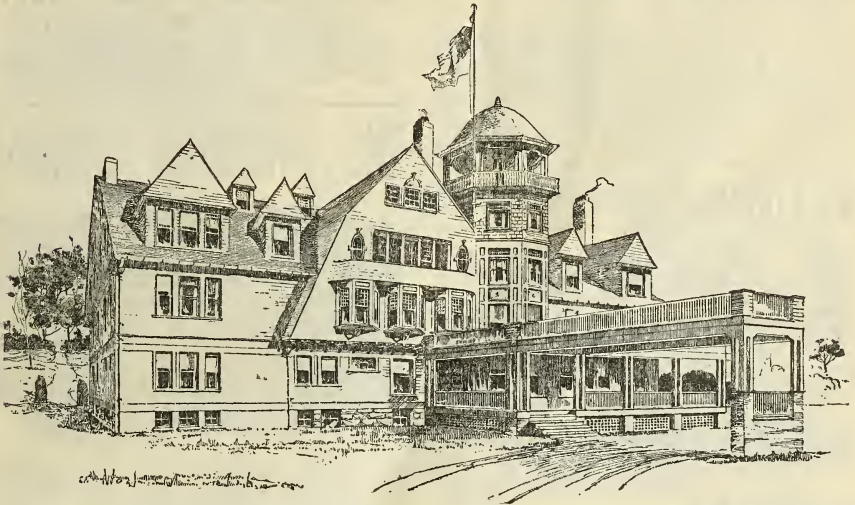
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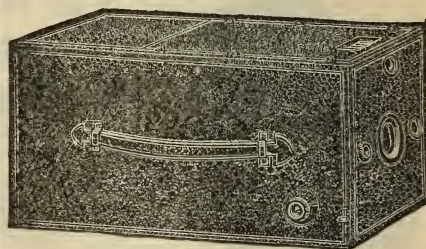
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AUGUST, 1891.

FLOWER gardens are always made under conditions so different that it is impossible that any two should be alike, and yet when a beginner asks how to make a flower garden there should be some well-formed principles to govern operations. The term, flower-gardening, covers a wide range of horticulture and includes the cultivation of both tender and hardy plants, and the use of all the known devices that assist in the work; the subject, therefore, is a large one and volumes have been written without exhausting it. For the present we desire only to consider some features of out-door flower-gardening, and that as conducted by amateurs. The professional flower-grower on a large scale operates in ways that cannot be followed by one who cultivates on a small scale and without expectation of pecuniary profit. There is a wide-spread practice among our people to surround their homes with grassy plats and lawns, to rear a few trees and flowering shrubs and roses, and

perhaps a few beds of geraniums and some others of the so-called bedding plants. But this arrangement is in many cases a part of the furnishing of the place, as much so as the walks and fences; it is considered the proper thing to do, and all do it in some way, but it can hardly be called gardening; there is no objection to so naming it on account of the restricted scope of the work, but on account of the purpose for which it is done. One person can put more real gardening into a pot of flowers than another can upon an acre. One will comprehend the wants of plants and meet them while another, totally oblivious of all plant nature and plant needs, is trying his "luck" to make a show with plants. One can do real gardening with a vase of plants or a box on a veranda or window and can develop the arts and cultivate the instincts of the gardener with only a few plants. It is not claimed that the gardener should not be pleased to have the result of his work

admired; one of his real motives is to please others; but the true gardener is not controlled by vanity. To admire plants sufficiently to cultivate them for their beauty is very different from expending money on them for the express purpose of making an impression on others. The lover of plants will expend a great deal of labor to see a continuous growth and improvement in his plants, and have flowers of different forms and colors succeed each other from day to day, and week to week, through the warm seasons of the year. The question is how these results can best be obtained. The plants to be dealt with are shrubs of low and of high growth, bulbs requiring considerable diversity of treatment, hardy herbaceous plants whose roots will live in the ground through the winter, and plants raised from seeds sown each spring. On what system can such plants be arranged to be most easily managed and to give the best results in every respect? Plainly the answer that would do for one place would scarcely comply with the condition of some other, and yet, perhaps, it can be stated so broadly that it will be a guide in a general way. The taller shrubs must be placed where they will not hide low plants. If one has sufficient extent of ground it is best to set apart a portion of it for the flower garden proper, and reserve the shrubs for grouping on the margin of the lawn. Roses can be used in this way to some extent, grouping them with other shrubs or by themselves but always in reference to their habits and needs. If well placed they can be very effective at many points of large grounds all through the season. But a very satisfactory way with roses is to give them a special bed in the garden; when a large number of them is cultivated their requirements can be most easily met in this way. But there are medium-sized places where there is not sufficient room for a good display of flowering shrubs on the lawn and a piece of ground set apart for a flower garden; there is room if both are combined. In this case a grass plat can surround the house with a few trees or shrubs appropriately placed and the remainder will be specially devoted to plant culture.

Here, again, in planting this piece of

ground, must be observed the rule of planting the larger shrubs at the back, the lower in front; but the rule is not inflexible—it does not oblige us to plant with a ten-foot pole in the hand, or to be governed entirely by our knowledge of the relative heights the shrubs will attain; on the contrary, it is best to usually group the plants in families, planting together those which are allied to each other, but sometimes, also, varying the rule in order to place near others those which make contrasts or harmonies when in bloom, or by their foliage. The result will be groups of shrubs, some larger, some smaller, and all forming an irregular border on two or more sides of the appropriated ground. In front of this line of shrubbery, all around, may be marked out a border wherein can be raised low, flowering plants. As the shrubs when grown will extend outward over this border at least three feet, and as it is desirable to have from five to six feet of space for the low-growing plants, the width of the border should average from eight to nine feet outside the outer row of shrubs. Now the contour of this border may depend on one's taste—it may be gently wave-like or it may be straight. In the latter case there is no offense to good taste, for straight lines are quite proper in a piece of ground thus set apart for an artificial plantation; but, on the other hand, a delicate skill may so draw curved lines that they will be far more pleasing than straight ones; and, yet, again there is danger by inexperience and lack of nice perception, of making curved lines which will appear far more artificial than the simple straight ones. Of course a walk must run alongside of this border; three feet is as narrow as it should be, nor need it be wider. The rest of the included ground must be divided in some manner so that its different parts can be easily reached; thus there will be formed beds of convenient size for working. These beds should not be smaller than necessary; a width of about six feet is convenient, and such length as will best suit the plat of ground. The form of the beds must depend much on the shape of the whole ground, somewhat on the contour of the outer border. How shall the walks be formed? There are three general ways; the simplest after

the beds have been formed is to leave them as the natural soil; an improvement on this way is to cover them lightly with gravel; but the most natural in appearance is to have them in grass, so that the beds appear to have been cut into the grass or lawn. With the path graveled or left in the natural soil it will be necessary to border the beds in some way to preserve the edges. This has been done with tile, stone, and pieces of boards, all of which has a stiff formal appearance; another way has been to edge the beds with some perennial plant, hardy enough to stand out over winter, and of low growth so as not to hide low plants in the beds. With the walks in grass no edging is necessary. Not many good edging plants are known, and as a rule they are difficult to keep in good order, and, therefore, the grass walks are greatly to be preferred in all cases when practicable. In a parterre, such as has been described, can be raised a great variety of plants. It may constitute a conservatory of all the best hardy herbaceous plants that will remain from year to year. In the beds can be planted all the so-called tender bulbs which need to be removed in autumn; every fall a planting can be made of the so-called Dutch bulbs and other

hardy bulbs; here the many varieties of annuals can display their bright blooms; and into the beds can be turned for the summer the house plants until time to remove them in autumn; and, lastly, one can devote such of the beds as desired to the so-called bedding plants, though as a usual thing these plants will be placed in beds in close proximity to the house or the walks leading thereto, as they are intended especially for display.

Thus in these general hints it is hoped there may be some ideas which will be helpful to those about to form flower gardens. Nothing has been said of the character of the soil, for a small surface such as would be devoted to the purpose can be worked over and moulded into what is necessary. It scarcely needs to be said that the piece of ground must be well drained, naturally or artificially. By the use of well-rotted stable manure, and the addition of sand if the soil is too heavy, or clay, if too light, and both clay and leaf-mold if too gravelly, it can be given the desired texture. With a good soil properly fertilized and a good supply of water always at command one can do almost wonders, in a flower garden of this character, in developing beautiful plants and flowers.

OUR NATIVE PLANTS.

III.

Those who are so fortunately situated with a garden as to have it on the bank of a pond, or with a constant little stream or brook running through it, are able to raise a great variety of handsome plants along the banks and at the water's edge which are strangers to higher grounds. A very interesting and hardy, native water plant is the water arum, *Calla palustris*. This plant, in its general features, may be said to bear considerable resemblance, except in size, to the popular Egyptian *Calla*, *Richardia Africana*, cultivated in almost every household for its great, white, so-called flowers, in winter and early spring. The water arum is strictly a northern plant, confining itself in this country to the region northward of Pennsylvania and of the Ohio river, and from New England westward. The engraving

on the following page gives a good idea of its appearance when in bloom. The heart-shaped leaves are from three to four inches in length and about the same at their widest breadth, and the leaf-stems are about as much more. The flower stem or scape is from four to six inches high bearing at its summit an ovate, spreading, white spathe, which encloses until it is fully opened, the oblong, cylindrical spadix. The spathe, or showy part of the flower, is from an inch and a half to two inches in length. The plant comes into bloom in June and July, and the flowers—really only some stamens and pistils—on the spadix are succeeded by red berries. The plant has a prostrate, creeping, fleshy rootstock which sends down roots along its course. This calla, and there is but one species of it, grows in Central and

Northern Europe and in this country. The inhabitants of Lapland have used the rootstock for food. In its natural state it is very acrid and distasteful, but, after

the northern part of this country if provided with the proper water sites. Masses of it grown along the water line are handsome objects. To anyone who might



CALLA PALUSTRIS OR THE WATER ARUM— $\frac{3}{4}$ NATURAL SIZE.

drying and washing, it is ground into flour, and made into a kind of bread, and the process of baking changes its properties and makes it palatable. There are no difficulties about raising this plant in all

wish to try this plant and who does not know it, or know where to get it, it may be said that the plants can be procured at a moderate price of dealers who make a specialty of native plants.

THE NEW INDUSTRY.

The presents carried by the sons of Jacob to the dreaded ruler of Egypt were spices, honey, "nuts and almonds." The nuts referred to as distinct from almonds were probably Persian walnuts, which form one of the staple commodities of the East.

That Solomon was a nut grower is proved by his saying somewhere in Ecclesiastes, "I went down into the garden of nuts to see the fruits of the valley." And yet in the face of this proof that "there is nothing new under the sun," and of Solomon's wisdom and advanced ideas we have in a recent agricultural report, "Nut Culture as a New Industry." How many years have we spent in zigzag journeyings through the wilderness and how long will it take us to catch up with Solomon?

The figures connected with nut growing do look very enticing, but while we hold fast to the fact that "figures cannot lie," it is well to remember that, nevertheless, "liars can figure,"—an ungracious proverb that has also proven true.

Learned men of the present day are much exercised about the kind of food necessary to produce the greatest amount of muscular health and strength, and nuts of all kinds have been pronounced by them *par excellence*, as an article of diet. Besides the beauty of nut trees and the gastronomic utility of their fruits, nut plantations seem to be rapidly making fortunes for those who have been sage enough to invest in them.

Chief VANDIEMAN of the Department of Agriculture predicts that the cultivation of nuts will soon be one of the greatest and most profitable industries in the United States. The large returns from individual trees, and immense profits from established orchards, have stimulated the interest, and our foremost enterprising fruit-growers are planting nut trees largely for market purposes; others who enjoy nuts during winter are realizing that they may be had in abundance for the mere trouble of planting.

The pecan is the nut of the future, Mr. VAN DIEMAN thinks, but he forecasts large returns from walnuts, chestnuts,

pine and hazel nuts, almonds, filberts, etc. "A grower in Florida has now a grove of 4000 pecan trees six years old; when they begin to bear their product will be worth \$100,000 yearly, at wholesale." But this is counting chickens too soon. "Mr. C. H. DANIELS, of Georgia, has a pecan tree which bears annually from ten to fifteen bushels of nuts, which sell readily at wholesale for four dollars and five dollars per bushel." "Col. STUART, of Ocean Springs, Mississippi, who has made a wide reputation as a successful cultivator, says: 'I planted those large paper-shell pecan nuts when I was fifty-seven years old, and now, at sixty-nine, I tell you they help me to live! I got one hundred and seventeen pounds from one tree last fall, sold one hundred and five pounds for one hundred and five dollars and planted the remainder of them and have raised a fine lot of young trees which are for sale. Pecan culture, planting the very large nuts, I consider one of the safest and best paying industries a man can engage in.'" This combined cloud of witnesses and figures certainly does make orange-growing and tobacco-raising seem much less tempting.

The pecan forests of Texas furnish large quantities of rich nuts to the market of New Orleans, whence they are shipped to Europe, where they are said to bring a higher price than any other nut. This *Hicoria* pecan is a native tree growing from Southern Indiana to the Gulf of Mexico; valuable new varieties are being obtained which are propagated by grafting and sold for fancy prices. *H. pecan* is known in our botanies as *Carya olivæformis*, but the genus was first named *Hicoria*, and the right of priority of the name has recently been recognized. It is a beautiful, symmetrical and rapid growing tree with luxuriant, light green foliage, much narrower than that of any other hickory. Its nuts are oblong, smooth and thin-shelled, with sweet and delicious kernels. There is a fine specimen tree in the grounds of the capitol at Washington. The trees are generally planted forty-eight to the acre, covering the fresh nuts where they are to grow in the fall, as is the rule in planting all nut trees.

Another profitable hickory is *H. ovata*, the shell or shag-bark. This is, without doubt, the most popular of our wild nuts, and is the only hickory-nut with a shell thin enough for dessert purposes. Hybrids with thin shells are becoming common; but it is feared that the thin shells may be at the expense of the fine keeping quality of the nuts which the thick shell insures. *H. ovata* is a most picturesque and graceful tree, good for parks, whether planted singly or in groups. Hickory trees require a rich, mellow soil, and when found growing wild are considered "signs of good land." There is much difference in the size of the shell-bark nuts. A tree growing in Union Co., N. C., bears nuts as large, with shells as thin, as English walnuts. Young trees are difficult to transplant and therefore the nuts should be planted where they are to grow. A grove cut for timber soon renews itself from sprouts which, if properly treated, make fine trees. The pig-nut and mockernut, when quite large trees, are often grafted with *H. ovata* and made to pay well for the ground which they otherwise cumber.

The prophet Ezekiel testified concerning the beauty of chestnut trees, and in his time doubtless cracked many a chestnut, but of their worth as a financial speculation he probably knew little. The Spanish chestnut is more than twice as large as *Castanea vesca*—the American—but is not half so sweet. It is, however, delicious when cooked and the number of delicate dishes prepared from it is surprising. A number of recipes come from Italy, Germany and England. Among them are, "Chestnuts stewed with Cream," "Chestnut Bread and Griddle Cakes," "Chestnut Soup," and "Chestnut Stuffing for Fowls," all of which have been pronounced delectable by different epicures. The Spanish chestnut grows readily from the nut, thrives well in this country and produces in about seven years. A good average for a Spanish chestnut throughout its prime is estimated at twenty-five dollars yearly. A Japanese dwarf chestnut has been introduced lately as bearing, at three years of age, very large nuts of a superior quality, but it is as yet a novelty not well tested. All three make beautiful shade trees for the lawn, but

none are handsomer, none so sweet, as our own native chestnut. It grows naturally over a large part of the United States and thrives better than foreign varieties, and by hybridization, budding and grafting the nuts might be greatly improved in size. Many old worn-out fields, practically worthless in present condition, chestnuts might turn to good account. The timber would be commercially valuable, but the nuts would bring much larger returns to the owner. Among the unfenced mountain lands belonging to our family is a large tract known as Chestnut Cove, the immense trees covering which my father had left standing year after year "to buy shoes and stockings for poor children." The youngsters used to trudge through our yard with great sacks full of them, and sell them in the village for sometimes two dollars a bushel, seldom offering us a handful or a word of thanks. These same youngsters deduct largely from the profits of nut and fruit growing in our locality, not even barbed wire proving efficient.

The Paragon and Dupont are the most highly praised strains of native chestnut. Dupont comes from Delaware, and is warranted a pure native seedling. The original tree near Dover is said to have borne from thirty to forty dollars worth of nuts annually for years past, but within the last year or two the rose-bug has partially destroyed its blooms. The nuts average an ounce in weight. *The Country Gentleman* records an instance where a man sixty years of age planted a chestnut orchard and lived to enjoy its fruits and profits.

Castanea pumila, the Chinquepin, is a small tree of twenty or thirty feet, bearing usually at the height of four feet. Its nuts are small but sweet and sell readily, school-boys in particular being always eager to buy them. Under cultivation this tree might do wonders, as, in case of well-grown specimens, the nuts double in size and the yield is enormous. It is native and quite plentiful in the Southern States. Its feathery sprays of perfumed white bloom make it very ornamental.

As for English walnuts, "an orchard in California containing one hundred acres yields a net profit of \$15,000 yearly." Another in the same State of forty acres "al-

though not in full bearing last year, gave a return of nearly \$6,000." This walnut, *Juglans regia*, grows well in many of the Southern States, and bears abundantly. It is one of the most beautiful of trees and eight or ten years from planting begins to bear.

Our native black walnut, *Juglans nigra*, is amongst nuts what bacon is amongst meats, strong and greasy. The shell-bark is delicate as cream, the pecan next in delicacy, next the English walnut and then our own hardy species. Its nuts are rich in oil and might be used as English walnuts are used in Cashmere, where 1,150,000 pounds of kernels are annually consigned to the oil-press. Another objection to the black walnut is its hard shell but the tree is very valuable as timber, and where planted for this purpose, the nuts might at least be saved to swell the sum total, for at a low price they sell readily, and are borne in heavy crops long before the trees reach "timber size;" Southern boys store them away by wagons full for winter use, and disguised in nut cakes and candy they are very palatable. A "curly black walnut" log of large size, will sell for a fabulous price.

Juglans cinerea, or butternut, is not so abundant as *J. nigra*, is better adapted to poor soils, colder climates and higher altitudes, is seldom planted for timber and has a nut much like the black walnut in flavor and quality. In shape it is very different, being long and narrow and easily cracked, splitting lengthwise in whole or half kernels. The tree bears heavily when quite young.

The almond tree, *Amygdalus communis*, is beginning to "flourish" in this country. It, however, requires peculiar soil, deep, dry and sandy, or calcareous. Any soil, not too moist, may do though, if one can be satisfied with anything less than its best. Bearing trees average about twenty pounds of nuts each, which at thirty cents a pound is put at \$1,000 an acre.

The filbert, *Corylus Avellana*, is dwarf, hardy and an abundant yielder. It can be grown with very little trouble from nuts or layers and is usually planted in rows ten or fifteen feet apart. In Kent county, England, where grown on a large scale, it is never suffered to rise higher than six feet, and is regularly pruned like the gooseberry. There are several varieties—white-skinned, red-skinned, cluster, and cob-nut, the latter a fine, large variety.

There is little difference between the filbert and our hazel-nut, *Corylus Americana*, except in size, and cultivation always increases this. Wild hazel-nuts are gathered for market and sell well in many localities. A native, and hardier than the filbert, there is no reason why the hazel-nut should not displace it among Americans. It is grown like the filbert and like it is a rare good keeper.

The peanut, despite its name, is not a nut at all, but an annual species of pea, that is planted every spring, but the "humble roasted goober" does not on that account lose either flavor or popularity.

L. GREENLEE.

ARLINGTON PARK, SALT LAKE CITY.

This little park in the suburbs of Salt Lake City consists of about two acres; it is an old hollow or gulch, such as are very common in this region; this one at some time was probably washed out by a cloud burst, and by being in a moist situation, a number of springs were opened up; in a few years willows and brush covered what otherwise was a barren, unsightly gulch, making a small wilderness which was an objectionable feature to nearly everybody in the vicinity.

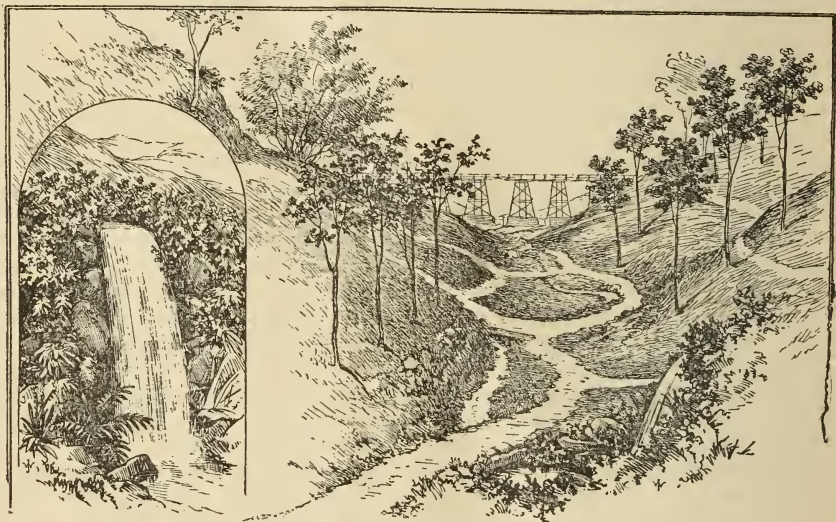
Lately, during one of our western

booms, a real-estate firm bought the place with a surrounding tract of land, and commenced cutting the adjoining land up into building lots; but the old gulch was a drawback to the sale of the lots, which were very desirable otherwise, as they were on an eminence overlooking the valley, and close to the city. So, to overcome this difficulty, it was concluded to make a small park of the hollow. A force of men were put on, and with draining, terracing and other necessary work, it was transformed at the small cost of about one

thousand dollars for work, designing, trees, etc.; after this, instead of the adjoining property selling slowly, those lots nearest the park were the first to change hands. The park is considered worth ten times what it cost its owner; the trees are, of course, small at present, but, even as it is, a great many people visit it to see something pretty, or different from the usual scenery.

In laying out this little park I have followed the natural lay of the land, leaving a mound here, putting terraces there, as natural necessity seemed to require; and

work, and there are never two points alike; from top to bottom the scene is ever changing, and does not get monotonous. In a picture of such a place it is impossible to give the details, and a person can get only a faint idea of it from a photograph or engraving. Persons who are acquainted with the place and see the photographs of it almost invariably say those are pretty pictures but the place itself is far prettier. Some of the points to be gained by this method of treating a piece of ground are cheapness, natural beauty and originality; the gardener is



ARLINGTON PARK, A VIEW UP THE HILL—WATERFALL.

so, the same with the foot paths, and the water; both were allowed to have the natural course; the result of such work, if properly done, is very pleasing to the eye, more so than regular geometrical

given unlimited scope to display his talents in developing the different parts of the ground in accordance with its natural adaptations.

JNO. C. SWANER, *Salt Lake City, Utah.*

SOME DESIRABLE CLIMBING PLANTS.

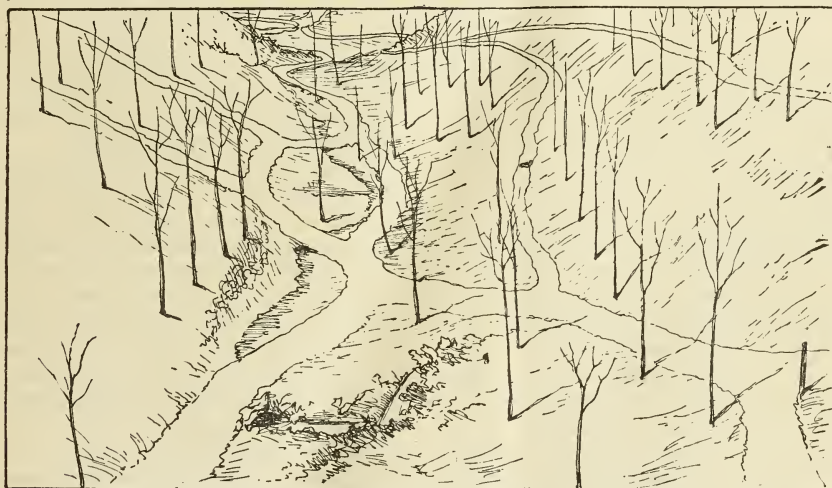
Few plants are more easily cultivated, and very few, if any, add more to the dainty grace of window or garden than some of our very common climbers. Take the old-fashioned morning glory, what more delicate and dainty than its almost transparent, numerous and many-hued blossoms? From June white, through all the delicate shades of pink to deep dark crimson. From crimson to the darkest shade of purple. From purple down

through all the shades of blue to white again. To say nothing of the striped ones, white ground with many shades of pink, crimson and blue stripes. Planted out doors the morning glory may be utilized to cover old buildings or dilapidated fences. Have you a veranda which you wish to enclose, making a cool, shady retreat from the summer sun? To accomplish your object quickly and cheaply, spade a narrow trench the whole length

of the veranda, make the soil rich; sow morning glory seeds thickly in the prepared trench, and string twine from the top of the veranda to the ground, six inches apart. Secure one end of twine to the veranda by small nails, allowing string enough to reach the ground, make the other end fast to wooden pins which can be driven into the ground. Or, if the expense is no object, a much neater, more satisfactory trellis can be made by stretching wire fencing (such as is used for poultry yards) along the side of the veranda, in place of twine. Strings and wire do

rich and give plenty of water it will soon be a bower of green, and you will have to be an exceedingly early riser to get up ahead of the 'glories.' In the house their beauty does not fade in an hour or two but they remain open all day. Florists now offer morning glory seed especially for winter flowering, but the seed saved from the glories that have made the summer's mornings glorious will grow and blossom in the house.

Another old-time favorite is the Madeira vine, one which to me seems to be but half appreciated. Its rapid growth should



ARLINGTON PARK, GROUND PLAN OF CENTRAL PORTION.

not make as artistic trellises as can be made from twigs and small branches of trees and in their natural form, but many people can easily obtain the twine or wire, who could not possibly get the more natural material.

But to return to our morning glories. After they are a foot or more high a good mulch of leaf-mold or chip dirt will be of great benefit to them. If well mulched and given plenty of water the leaves and blossoms will be "immense." And if a little care is exercised to turn some of the buds from the outside towards the enclosed veranda, the blossoms will remain open all day.

Old-fashioned as it is, nothing is more dainty and sweet for a winter window climber than the morning glory. Make an arch of two feet wide wire fencing over a window and at the two ends set pots of morning glories. If you make the soil

recommend it to every one who is in haste to have some unsightly object hidden from view, or who wishes to artistically drape some sharp angle or shade some sunny window. Its slender, curving, swaying, graceful sprays lend an airy lightness to a bouquet which otherwise would be stiff and formal. The lovely dark green, waxy leaves have a beauty which is hard to find in any other climber.

It is propagated from tubers, which, as soon as danger from frost is over, may be planted out. They will sprout in a very few days if the weather is favorable. They will continue to grow until the vines are killed by frost; then the tubers should be dug and stored in dry earth in the cellar or where they will not freeze. There will be found growing on the old tuber a host of small ones, any of these, if not larger than a pea, can be broken off and planted in good soil and watered, placed in a

sunny window and in a few days will be growing nicely; very soon the vine will reach the top of the window, almost before any other vine would have made up its mind to grow at all. When planted out, the Madeira vine usually blooms in September, and is a fair and dainty thing to behold, when the vine is nearly covered with the delicately perfumed, creamy white blossoms, which nod and sway gracefully in the slightest breeze.

In the South the Madeira vine is hardy and the tubers need not be disturbed, only occasionally they need to be taken up and separated. One lady in the South says she has taken out clumps of the bulbs as large as a peck measure. What should we, who think a Madeira bulb as large as a cup a monster, think of one as large as a peck basket? The Madeira will find no fault with a poor soil, but will repay you with interest for all the encouragement, in the line of dressing and drink, you may be inclined to bestow on it. Give the Madeira vine plenty of room and a strong support. It is a vigorous grower and appropriates anything within its reach, to help it in its upward rush.

I was but a little girl when I owned my first Madeira vine. It grew in a very large south window, twined to a stout cord. It was a favorite pastime to put a pin into the cord at the end of the vine in the morning before my father left home, that he might see how much it grew while he was absent. His business kept him from home until late in the afternoon. It took only a short time to curtain the window with "living green," but no blossoms, which fact proved a great annoyance to one member of the household.

The different varieties of ivy are also very graceful and useful climbers, both for out-door and for house culture. The English ivy with its dark green foliage is a fine thing for decorating a north window, or to grow entirely away from any window. I have in mind one that grew in a large stone jar set on the floor. It grew up beside a window branching as it grew until, when reaching the top of the room, there were ten branches, two of the largest were trained around the walls of the room over windows, doors and pictures, they were then on the fourth side of the room. The other eight branches were trained

across the top of the room, they had been cut back, causing them to branch freely and the whole ceiling was nearly covered. It held itself in place by little root-like suckers that clung to the plastering. The owner told me that it had been stimulated by liquid manure, by burying bits of beef in the soil and by top dressing with chip dirt and old manure. I did not know until a few years since that the English ivy would live out of door during the winter in Maine, but I have a friend who never takes it in. Notwithstanding the fact that her ivy comes out all right in the spring, I have never had the courage to leave one out. The English ivy has periods of growth and of rest. While growing, it, like other vines, likes plenty to drink, but when resting it should be given just water enough to keep from getting *dry*.

The German or parlor ivy is light green in color and an exceedingly rapid grower. It will in a short time wreath a large window, and then stray off into new paths along curtain or picture cords or anything to which it can cling. It makes a pretty arch to a door, and with the aid of the ever useful wire fencing, it is an easily accomplished task. The ivy likes an even temperature and moist atmosphere and a rich strong soil.

Cobæa scandens. On account of its rapid growth it is one of the best of climbing annuals. It has attractive foliage and large, bell-shaped flowers which are, at first, of a greenish hue, changing rapidly to purple. The plants commence to blossom when quite small, and continue until frost. Under favorable circumstances they make an immense growth, sometimes making a height of twenty-five or thirty feet in a season. The seeds are hard to germinate and should be started in the house. Make the soil moist and plant the seeds *edge downwards*, and give *no* water until the seedlings are up, unless the soil in which they are planted becomes very dry. Sow seeds in March or April, and as soon as the plants are large and strong enough, remove a part of them to small pots and keep shaded a few days. As the weather grows warm gradually accustom them to out-door air, and plant out when *all* danger from frost is past. The soil where they are to grow should be well and deeply worked with plenty of

old manure added. In dry weather water liberally, and an occasional watering with liquid manure will help them "rush" business. Some people remove the plants from the garden, where they have done duty all summer, to the house for winter blooming, but a better way is to plant seed in August for winter blooming, or secure young plants by layering, which can be done at almost any time of the year by the following method: "Cut a notch near a joint, place in a pot and fill with soil and keep the soil moist." They will be from

two to four weeks rooting. It is a fine vine for parlor growth, withstanding the effects of gas and coal-heated air. It is not what can be called a tender plant, yet it needs sunshine, warmth, a rich, friable soil and plenty of water. If allowed to suffer for the want of water it will soon perish. Its tendrils are very clinging and will seek to support themselves by clinging to anything it can reach. It branches very freely, thus enabling a single plant to quickly cover a large surface.

DOROTHY LINCOLN.

THE DWARF YEW.

The long, gentle descent through field and wood is past and I am on the edge of a great chasm which has been carved out of horizontal strata by a creek which is still at work, its roar softened to my ear by the depth of the gorge; and here on the steep slope growing in great patches to the exclusion of all other growth is the plant I have come to see, the ground hemlock or dwarf yew, *Taxus canadensis*. This shrub is our nearest approach to the yew of Europe from which it seems to differ scarcely at all, except for its dwarf habit and its hardiness. Both like sunless spots, both have the same golden brown bark; the dark, shiny foliage which is paler beneath is common to each, and the flowers and fruit are exactly the same, as near as one can tell from the description of the foreign species. Some English yews are fifty feet around at the base but the trunk is short, our sort has no trunk at all, its branches six or eight feet long sometimes, spreading directly from the root, lying on the ground half their length and then rising, giving the shrub a saucer shape two to three feet high at the edge. Some of these larger roots are perhaps as old as the great hemlocks here beside them. No sunlight reaches the ground here except in scattered flakes, the slope to the north is steep as the roof of a house and there are many hemlocks and other trees. No evergreen has finer foliage, a hemlock twig magnified two or three times would be much like it only the yew's leaves are more uniform in length, forming great flat branching fronds; the young wood is

green as the leaves up to the third year. Then it becomes a rich yellowish brown for a few years, fading finally to the color of a young hemlock. The male flowers, a bunch of stamens coming out of a scaly bud, hang down amidst the leaves; the pistillate flower changes into a soft, bright red, erect berry the size of a large pea, having a cup-like depression at the summit in which lies a large, brown, naked seed. You can eat these berries if you like but they are not very good. The seeds of the English yew are poisonous, the leaves also, though the berries are harmless and are eaten by children; whether there is anything noxious in our species I do not know.

Looking at its rich dark foliage and graceful growth it seems strange it has not been more planted; in the shade of trees or buildings where nothing else can grow it would do well, no shade could be too deep for it. On the other hand, it may become used to the full sun; here are dense patches on the steep south-lying bank across the stream, green and vigorous and just now starry with the light green of the young growth against the dark foliage, which endures six to eight years, and thickly covered with the young berries. The long pliant branches overlap closely clothing the bank with a dense mass of green; it is not easy to tell how many roots there are, perhaps not more than one.

Not far away on the level bottom are other open-land clumps, stiff, upright bushes four feet or more high but showing their affinity to the trailing growths of the banks by their six or more

stems from one root. The foliage is smaller and more rigid in the open; instead of the flat branching fronds of the shaded cliff the leaves diverge in all directions. They really grow from all sides of the twigs, but in the shade have flat sprays like the hemlock. Grown from seed in the open it would endure the full sun, and for steep banks, low hedges or edgings, small yards or cemetery planting would be suitable, hardy, long-lived (the root at least), vigorous, and sure never to grow too large. We constantly see Norway spruce and fir balsam set only a few feet from houses, and soon there is

quite as pretty and could be kept within bounds.

The European yew has the male and female flowers on separate trees, ours have them all upon one so that any tree will bear the red fruits which are quite showy. Those of the foreign species are compared to red carnelian, ours are a bright scarlet slightly paled with chalk—the same tint perhaps. Our species seems to like good drainage, this great bluff with the forest gone and a little washing would be a stairway of rock, and the soil at the foot is gravelly; but it will live in any garden soil. One in my yard was set



SPRAY OF DWARF YEW—*TAXUS CANADENSIS*.

a great tree blocking up the windows and forbidding the growth of anything else. Many a small yard comes to contain little besides one or more of these great trees, which few people have nerve enough to cut down. A bed full of yew would be

twelve years ago at the foot of a bank wall where the earth was graded down into a hard clay subsoil; it has been much neglected but seems healthy and evidently intends to live indefinitely.

E. S. GILBERT.

THE FLORA OF PROVINCETOWN.

A long curving line of yellow sand sloping backward from the blue waters of the white, sail-dotted bay; a pale gray fog slowly drifting from the East across the brownish-pink bars and the green salt marshes; a solitary gull disappearing seaward; long, slanting sun rays in the West reaching down to meet the great white-capped breakers which are ceaselessly booming on the outer shore; and, with all this glory of sea, and sky, and land about, I sit and dream away this August afternoon.

Upon this sandy knoll behind the town are huckleberries, blue berries, bay berries, sweet spicy "wintergreen plums," golden rod, great orange plumes, pure white everlasting, sweet fern, deep pink wild roses with dark, shining foliage, and a starved looking patch of moss here and there, and we wonder how all this can grow on nothing but sand. Here in many door-yards stand great weeping willows,

and we think of the grave of the exiled Emperor on far off lonely St. Helena, whence came the parent of these willows. The little Portuguese children, brown faced, round eyed, sell the berries up and down the street, laugh shyly when we speak to them, but shout after us, "missis there's a caterpillar on your dress." Down the street away is a novel *jardinière*; standing in a back yard is a dory painted green and white and filled with blooming plants and vines, tall sunflowers simulating masts, rising from the middle of the boat. Every door-yard is filled with flowers, dahlias, tiger lilies, geraniums, fuchsias, pansies, and all sorts of gay, bright blooms. All the soil in the town has been brought in vessels from every quarter of the globe, as ballast on return trips.

Strawberries are abundant, growing large and sweet on the sands. Long rows of cone covered yellow pine trees, rather stunted looking, grow on the sand

between Provincetown and Truro, the seed sown in furrows by a Doctor NYRICK about fifty years ago. Some years there are a great many beech plums; cranberry marshes are everywhere and already the white berries have begun to take a pink tinge; along the roadside grow great patches of a low heath-like plant which is called locally "bunch grass;" bright orange daisy-like flowers, the *chrysopsis*, I think, grows beside it, with a rosy purple *polygala* occasionally; everlastings of three sorts with mat grass, sand grass, and, close to the shore, cat tails and the beautiful *glyceria*.

Beyond the town towards the west are great green patches of sand fen, long reaches of marsh grass where fiddler crabs abound, and the queer little sand fleas called "Guinea pigs" hop out of their holes. Across the end of the Cape towards the lighthouse on Cape Race, we wend our way, sinking ankle deep in the sand, botanizing; white pond lilies lie on the fresh water pond in the center of the town; we could not get any information about the pink ones said to grow there, no one had ever seen them; milfoil grows on the edge of the water; now is seen a few little maples and scrub oaks, and a dogwood or two; the bracken fern grows in their shadow, and golden rod all about; and the white meadow spiræa, and poison ivy with its shining leaves are everywhere; bright pink, wild roses are numerous and hundreds of the large, scarlet seed-vessels show amidst the small, shining green leaves. And over all there is a sight that we shall always remember; towering up above our heads, ten to fifteen feet high, are great, creamy white spikes of the clethra or sweet pepper bush, the air filled with its fragrance. They made us all think of hyacinths. How could they grow

so rank on that sand? Along the beach from the lighthouse to the life-saving station grow the pale purple sea rocket and, now and then, a spear of the harsh mat-grass.

At the east end of the town grow the large purple vetch, a hawkweed, St. John'swort, thistles, smilax or green brier, and rosemary; succory or "chicory," with its intense blue flowers, grows in the streets, and for contrast the yellow celandine. Willows and silver-leaved poplars are along the streets, and the huckleberry and bay berry ornament an old burying ground on a sandy knoll back of the houses, where the quaint cherub heads on the old brown stones look out from blackberry vines; and the carved skull and cross bones on very old stones are seen by pushing aside the goldenrod.

There are no fruit trees in the town. I did not see a currant bush, and but one peach tree. Every silver poplar has dozens of little ones coming up about it in the sand. I noticed one garden back of the town where corn and beans were growing thriftily, and cucumbers were large and plump. The ears of corn are very small but sweet, and potatoes ripen well.

As one looks at the shifting yellow sand the wonder is that anything can grow, and it seems at times as if the entire town would blow into the ocean. I sit in the twilight on the old wharf and look across the bay at the red light that flashes out over the sea and at the great steady Highland light that guides the fishing boats safely into the harbor, and the little Portuguese boys gather about with wonder and surprise at the little sketch that I have made of the old anchor that lies at my feet, and of the bunch of marsh grass in my arms, FLORENCE I. W. BURNHAM.



FOREIGN NOTES.

ROSES IN SPAIN.

The name of PAUL among English rose-growers is so prominent that one looks with interest to whatever may be written on roses over this signature. The name of ARTHUR W. PAUL therefore appended to an article in *The Garden*, bearing the caption above was rich in promise, but not more so than was revealed in fact by a perusal of it; and our readers, we are sure, will appreciate this account of Spanish gardens.

In that favored land of olives and almonds, oranges and palms, where *Magnolia grandiflora* grows to a size that would almost rival an English oak, one would expect to find beautiful roses, and a recent visit revealed enough and to spare for the fulfillment of the liveliest anticipations. Not, of course, the newest varieties, nor the symmetrical perfection of form in plant and flower as in a modern English garden, but a luxuriance of growth, a wealth of blossom, and a brilliancy of tint which we seldom see in our less genial clime, but which once seen dwell long and lovingly upon the memory. May is the month of roses in the sunny South, and I was prepared for the feast in store by the great masses of Banksian roses, both white and yellow, which I saw early in the month on my way to Spain in the gardens surrounding the old Roman baths in the beautiful city of Nîmes. The plants were growing on the face of a cliff some 20 feet or more from the ground, and the branches laden with blossom were hanging down almost to the ground. I saw these roses over and over again throughout Spain, always full of flower and always beautiful. Once I came upon the yellow kind used as an edging to a large flower bed, the branches being trained horizontally and tied to short stakes to keep them from touching the ground. This had a very beautiful effect. The most gorgeous of all roses, however, were the crimson Chinese or Bengal varieties, of which I observed several, the most beautiful being the sanguinea, or old crimson China. In the sunny climate of Andalusia these grow to a great height, especially when afforded the support of a wall or building, or allowed to twine in and out among the branches of the tall cypress trees, and I saw plants from 12 feet to 20 feet high literally covered with large globular blood-red blooms. The ordinary pink China rose was also everywhere very beautiful, masses and hedges of it in the public parks being laden with brilliant satin-like blossoms. In the gardens of the old Moorish summer palace, called the Generalife, at Granada, I found plants of the Persian yellow bearing blooms at least twice as large as those produced with us, and of the richest golden yellow color, such yellow roses in fact as I have never before seen even amongst the richest of our yellow Teas. Unfortunately, the peculiar odor of this variety was as pronounced as its splendid hues. In the same gardens some of the exquisite Tea Noisettes, such as

Lamarque and Solfaterre, were growing and blooming with a vigor and profusion which needed to be seen to be realized. Such gardens as these and those belonging to the Alcazar at Seville, which were laid out by the Emperor Charles V. in the sixteenth century, are a treat to lovers of old roses, many sorts now lost to cultivation in this country still lingering there in rude health; Damask and Alba roses, Multiflora, Scotch, Provence in almost endless variety, and perhaps most beautiful of all, the double *Microphylla* rose, with its rosette-shaped pink flowers shading to deep red in the centers, the petals as crisp in appearance as if modelled in the finest china ware.

The older Hybrid Perpetuals abounded everywhere, in public gardens and squares, at railway stations and in private gardens, growing with a vigor, and diffusing a fragrance, which, alas! are only too conspicuous by their absence in so many of the highly bred favorites of the exhibition stand in England. Having wandered into Portugal, I searched in vain at Cintra for the yellow Moss rose which is said to haunt its hills, but obtained instead a peep at that earthly paradise, Montserrat, with its stately tree ferns, its lordly conifers and magnificent daturas all laden with their trumpet-shaped flowers at the time of my visit. Strangely contrasting with this, but equally beautiful in their way, were the miles of rugged wilderness in Spain covered with Gum cistus and thyme in full bloom, enlivened here and there with patches of brilliant yellow broom and white asphodel; the balcony gardens of Seville with their caruations rising tier upon tier until the tall house-front appears garlanded with this beautiful flower; the orange and pomegranate groves of Valencia, every tree a picture, and the flower of the orange making the air heavy with its perfume; the gardens of Philip II. (known in English as well as Spanish history) at the Escorial, the mazy patterns of box remaining the same to-day as in the time of the august founder; and the modern park at Barcelona, grandly conceived, and by the help of that soft and genial climate as charmingly executed. All these and many other strange and equally beautiful objects of attraction could not fail to delight the lover of horticulture, and to richly supplement the feast of roses.

THE CARNATION.

A paper on this subject prepared by Mr. JAMES DOUGLAS and read before the Hawick Horticultural Improvement Association, England, is so full and clear that it is here reproduced, assured that it will gratify and instruct those who read it. England has always taken the lead in carnation growing and no doubt its climate is well adapted to the plant, but our own gardens are also doing splendidly with it, and there is no more popular flower. The paper is one of some length

but it is thoroughly practical and will be continued in a future number.

THE HISTORY.

It has now been determined, as nearly as anything can be, that the original wild plant from which our beautiful garden carnations have been derived is the *Dianthus caryophyllus*, or clove pink, of LINNÆUS. It produces pale flesh-colored flowers, and has been naturalized on old walls in various parts of England. As a garden flower it is supposed to have been cultivated as early as the time of EDWARD III. It is mentioned by CHAUCER because the flowers were useful to flavor ale. It is alluded to by SPENSER in the "Shepherd's Calender" amongst other garden flowers in these words:—

"Bring hither the Pincke and purple Cullambine,
With Gilliflowres;
Bring Coronations, and Sops-in-wine,
Worn of paramours."

SHAKESPEARE, of course, alludes to the carnation. In the "Winter's Tale" Perdita is made to say—"The fairest flowers of the season Are our Carnations, and streaked Gillyflowers, Which some call nature's bastards: of that kind Our rustic garden's barren; and I care not To get slips of them." The work of REMBRANDT DODOENS was translated by LYTE and published in 1578, and there we come upon the word carnation for the first time.

In 1579 the "Historie of Plants" was published by JOHN GEKARDE, and at page 472 he tells us all that he knew of the garden varieties, "and how every yeere every climate and cuntry bringeth forth new sortes, such as haue not bene heretofore written of; some whereof are called Carnations, others Cloue Gilloflowers, some Sops-in-Wine, some Pagiant or Pagon colour, Horseflesh, blunket, purple, white, double and single Gilloflowers, as also a Gilloflower with yellow flowers. The which a worshipfull marchant of London, Master NICHOLAS LETE, procured from Poland, and gaue me thereof for my garden, which before that time was neuer seen nor heard of in these countries." He alludes to a few garden varieties and figures "the great double Carnation" with only a few extra petals, and also a variety with more double but much smaller flowers, "the double Cloue Gilloflower."

GEKARDE was therefore the first to grow and write about the yellow carnation. The "Paradisus" of PARKINSON was published in 1629, and contains a list of nineteen varieties of carnations and twenty-nine varieties of gilloflowers. There were many colors—white, crimson, blush, flakes and stripes, the yellow or orange tawney. A number of the best varieties are figured, but the figures do not give one any idea of a really double flower. The carnation had much of the largest flowers, the gilloflowers were smaller. The type of the carnation was "The Great Harwich or Old English Carnation," which PARKINSON calls a goodly great flower worthy of a prime place. The gilloflowers seem to be of the type of our pinks. REA's "Flora," published in 1665, gives us more information, and hints that some of the varieties formerly grown in our gardens had passed out of cultivation; and as far as we can learn from later authors the carnation in its various form of selfs, flakes, and stripes was successfully cultivated during the later years of the seventeenth and the early part of the eighteenth century. The second edition of the "Gardeners' Dictionary" was published by MILLER in 1733. PHILIP MILLER was gardener to the Worship-

ful Company of Apothecaries at their botanic garden, Chelsea, and he writes a long and elaborate article on the carnation, which contains all that was likely to be known of it up to that date. He says the "florists" divide the carnation, or clove-gilliflower, into four classes. The first they call flakes, these are of two colors only, and their stripes are large, going quite through the "leaves" (petals?). The second are called "bizarrs," these have flowers striped or variegated with three or four different colors. The third are called "Piquettes," these flowers have always a white ground, and are spotted (or pounced as they call it) with scarlet, red, purple or other colors. The fourth are called "Painted Ladies," these have their petals of a red or purple color on the upper side and are white underneath.

Here we have a correct definition of the carnation as it was cultivated in England more than 150 years ago. MILLER informs us that then, as now, the list of names of cultivated varieties was a long one, the names being borrowed from "the titles of noblemen or from the person's name or place of abode who raised it." The "florists'" properties of a flower as defined by MILLER were as follows:—

- "1. The stem of the flower should be strong, and able to support the weight of the flower without hanging down.
2. The petals of the flower should be long, broad, and stiff, and pretty easy to expand, or, as the florists' term them, should be free flowers.
3. The middle pod of the flower should not advance too high above the other part of the 'blowers' (? flower).
4. The colors should be bright, and equally marked all over the flower.
5. The flowers should be very full of petals, so as to render it when blown very thick and high in the middle, and the outside perfectly round."

The above flower properties are given exactly in MILLER's own words, and as a matter of cultural and historical interest his directions for culture are much the same as we now practice in our own gardens; even to the system of planting one or a pair of plants in small pots and sheltering them in cold frames. MILLER says he used pots that cost a half-penny each. The plants were put to bloom in pots measuring nine inches across in the clear. From the time of MILLER until the end of the eighteenth century we have evidence that the carnation has been brought by the art of the florists to as high a state of floral excellence as we now see it in our gardens. In the year 1788 there was figured in CURTIS'S *Botanical Magazine* a scarlet bizarre carnation named "Tartar," which had been produced from seeds by an ingenious cultivator of these flowers named FRANKLIN, who had his garden in Lambeth Marsh. The colored plate of this carnation is No. 39, *Bot. Mag.*, and when placed in juxtaposition with the finest scarlet bizarres of the present day Mr. FRANKLIN'S flower can hold its own with the best of them. Mr. CURTIS here states that the *Dianthus caryophyllus* or wild clove "may be found, if not in its wild state, at least single, on the walls of Rochester Castle, where it has been long known to flourish, and where it produces two varieties in point of color, the pale and deep red."

In 1824 the third edition of HOGG'S "Treatise on the Carnation" was published, and therewith we have colored plates of the bizarre carnation and also, the yellow carnation or picotee. In respect to the quality of the flowers of the bizarre carnation there is no advance upon that figured by CURTIS, but yellow carnations and picotees had attained to a high

state of perfection. HOGG says his colored plate represents a yellow picotee, but as the petals are marked with flakes or stripes, and the margin is also marked with short lines instead of a continuous margin as we have now upon the best yellow varieties, it could not be admitted with the modern picotees. THOMAS HOGG was a good carnation grower, and gave most minute cultural instructions; but we have learned to grow our plants well without the endless trouble entailed in mixing up, turning over and over again the elaborate composts recommended by him.

In the "Horticultural Register" of 1836 there is a colored plate of a true yellow carnation, under the name of Roger's Unique Golden Crimson Bizarre; it is beautifully marked in two colors on a rich yellow ground. It is stated that the nearest approach to it is one of the lately introduced yellow picotees. We are further informed that the seeds from which the plant was raised had been obtained from Brussels; moreover, a small stock of plants only could be obtained, and as the constitution of it was not very vigorous it would soon pass out of existence, and unless seedlings were raised from it the stock itself would be lost to the floral community.

DESCRIPTIVE REMARKS.

For garden purposes the carnation is divided into numerous sections, in which must be included the picotee, and these are arranged as under in the schedules of the National Carnation and Picotee Society.

I. *Scarlet Bizarres*.—This type of carnation has for many years been at the head of the list in exhibition schedules and the catalogues of the leading florists. The flowers have flakes or stripes in maroon and scarlet on a white ground.

II. *Crimson Bizarres*.—The flowers of this section are striped and flaked with a color approaching crimson, and also purple on a white ground.

III. *Pink and Purple Bizarres*.—These have a pale pink color in place of the crimson or deeper pink with the purple flakes; the ground being white.

IV. *Purple Flakes*.—In this the flowers are merely flaked or striped with purple of various shades, and in some cases the color is broken up into spots or small blotches, which is a serious fault. The purer the white the more is the flower esteemed; the flakes and stripes should be distinctly marked, and their beauty lies in their irregularity.

V. *Scarlet Flakes*.—The same remarks apply to this as to the purple flakes, and the color should be a rich and decided scarlet color; the brighter the color and the greater the purity of the white the better.

VI. *Rose Flakes*.—This is a very pleasing section

of the carnation, and is always much esteemed for the delicate rose tints on the white ground.

VII. *Sells*.—This is doubtless the earliest type of the carnation, and by many tasteful persons is the most highly valued. The colors are rich and brilliant, rose, scarlet, crimson, maroon, purple, white, yellow, &c., of many shades. They are all extremely beautiful for planting in masses or as isolated clumps in the borders.

The picotee is for garden and exhibition purposes divided into six sections, although there are but three well defined colors. Each color is again sub-divided into broad and narrow edged. These definitions may be as under:—

VIII. *Red-edged*.—In this as well as the other colors there are of course various shades, which in individual specimens are narrow, as in Thomas William and Violet Douglas, wherein the color is represented by a line, like fine wire round the margin of each petal. The medium edge has a broader and more irregular line, as in Emily, and the extreme width of the marginal color is in an old and well known variety named Brunette.

IX. *Purple-edged*.—Here the colors are in the same degree of narrow, medium, and broad.

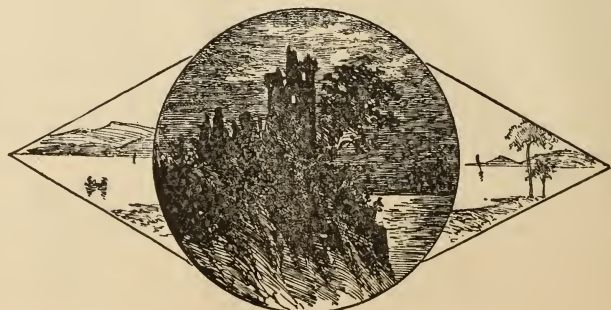
X. *Scarlet and Rose-edged*.—Herein the colors are supposed to be scarlet, and a very few of the varieties in cultivation may be described as of that color. Most of them are rose or salmon, but the most beautiful varieties of picotees are in this section, such as the beautiful narrow rose-edged Liddington's Favorite and the broad-edged scarlet Mrs. Sharpe.

XI. *Yellow Ground Picotees*.—The varieties in this section have become very numerous during recent years, and we have now as good quality in the yellow picotees as in the white ground varieties. One named Remembrance is of a rich yellow color and unmarked, except a fine line of rosy red round the edge of each petal.

XII. *Fancy Carnations and Picotees*.—All flowers that by reason of their peculiar shades of color cannot be admitted into any of the above classes find a refuge here. Some of them are very beautiful, and are adapted for border culture.

XIII. Into this last class I have placed the tree or perpetual flowering carnations. This class is greatly valued because of the plants flowering during the autumn, winter, and spring months. The stems partake of a woody nature, and produce side growths, which in their turn prolong the time of flowering, and delight us with their beautiful sweetly scented flowers at midwinter.

(TO BE CONTINUED.)



PLEASANT GOSSIP.

STRAWBERRIES IN THE GARDEN.

We have just come in from the strawberry bed in the garden, tired out after a long day's heavy picking. It seemed as if those berries must increase after the manner of the oil in the widow's cruse, for short rows whose leaves concealed the berries would sometimes require a half hour's work in picking. But the fruit, how beautiful it is! heaped in high crimson cones atop of every available receptacle in the house, all capped and sugared down to "harden" for canning and preserving early to-morrow morning. And the bed will have to grow more berries now to supply a demand in the village for berries at ten cents a quart. "Not a high price." No, but one that pays better than letting the berries run to waste by the bushel when you have all you can eat every day, and all your cans and jars filled for the winter; when every pretty child that peers wistfully through the palings goes away with pink-tipped fingers, red mouths of uncertain outline, and great clusters of heavy laden stems clutched in chubby, dimpled hands; when cat birds and "Bob Whites" challenge each other from opposite ends of the rows, and greedily heap the great red berries into piles which they neither eat nor carry away, barely sampling each one with a thrust of the sharp, polished bill.

L. B. PIERCE's delightful and practical papers on fruit-growing have "begun" a market garden and orchard of fruits for me, in the cultivation of which I try to be very sharp-eyed, practical and thrifty. The rows are very straight and cleanly cultivated and there are so many new tenants that there is no time for special and foolish petting for any of them; but I don't think all the money that I hope they will bring me will ever give me half so much pleasure as this old strawberry bed in the home garden, that has stood in the same place for years, only taking an outing to the other side of the garden every "off" four years, when the white grub needed remonstrating with. For

every year it has given us fruit galore, to eat and sell and keep in jars upon pantry shelves. Never a year but some one of the many varieties of which it is composed, "caught" the season, the bloom coming too late for frosts, the berries too early or too late for drought, etc., *vice versa*.

My mother maintains that this bed was first set in Wilson's and whenever she found a fine variety in a neighbor's garden she would get a few plants and add them to it, so that now it contains at least a dozen known varieties and some of the native, small, wild, sweet strawberries, with high flavor and aroma, have crept in through the fence from the grassy bank beyond and modestly taken a back seat, where they will be allowed to remain. I have a fine row of little seedlings started from some of the largest, sweetest, reddest berries gathered from this old bed.

I suppose a market gardener would groan over the method of cultivation—or rather lack of method—used with this bed. A neighbor of mine who grows her berries in rows of hills and has monstrosities of berries that your mouth cannot accommodate without two or three subdivisions, does laugh over my bed sometimes, but when her bed, as large as mine, and requiring twice as much work, yields only a dozen jars, besides fruit for table use, and mine fills a shelf with rows of jars, the laugh is on the other side. To be sure, my berries are smaller, and the labor of picking and "capping" is greater, but they are sweeter than hers, and ripen evenly, without a soft white spot on the under side. They are not so watery and flavorless as the large berries, and do not so "wilt down to nothing," when filling jars. Neither are they subject to dragging upon the ground and covering themselves with gravel.

But all this is not a plea for small berries. I have as large berries as anyone in my market garden. It doesn't take many to fill a quart measure, and they look nice to be sure, but it costs me no pangs of self-denial to sell them and eat

the smaller ones from the upland clay-soil garden.

Every fourth year the finest, strongest rooted young plants are taken up from this old bed and set in rows two feet apart, plants a foot apart in the row, in a part of the garden that seems most free from weeds and white grubs, having had clean cultivation the year before. No fertilizer is added to the soil at time of planting, which is preferably in April or September, though I have transplanted strawberries successfully throughout summer heat by setting a trowel or spade deep beneath them and setting clump of earth and roots together in one mass. They do not seem to know they have been moved at all, planted in this way. The rows in which they are set are not elevated into "hills" or ridges, but flat with the surface, as our summers are hot and dry, usually. They are kept clean by plowing occasionally throughout the summer, are rarely ever hoed, and if help of the small boy is scarce, to pull weeds, a mulch of leaves from the spring lawn cleaning is strewn thick between the rows to keep down grass, and the bed left to "fend for itself" until autumn, when it is well cultivated and cleaned, the leaves plowed under, etc. Late in December a heavy mulch of stable manure, strawy and full of litter, is scattered broadcast over the bed and it is left until February when just before blossoming time the rows are scattered with unleached ashes and charcoal just as taken from stoves and fireplaces. In addition to this the annual spring cleaning of the earthen floor of the "smoke-house," with its drippings from meat salted heavily, furnishes a light dressing of salt and saltpetre which I am convinced adds much to the fruitfulness of the plants. After the berries are gathered the bed is cultivated as before, with the exception that the old row is plowed up leaving the runners and young plants to form a new row in the former space made rich. Our strawberry season lasts from first of May till July. L. GREENLEE.

STRAY LEAVES.

I think every thoughtful florist of experience will bear me out in the statement that plants have constitutions as truly as people and that the constitutions of vari-

ous individual plants differ as much as that of different people. And by constitution I mean the ability of the plant to endure abuse, to resist disease, to bloom freely, or its tendency to disease, weakness and general lack of vigor. And all these are inherited from the parent; and depend partly upon the constitution of the parent and largely upon the condition of the parent at the time seed was ripened or cuttings taken. Cuttings being more likely to inherit the parent's condition than seedlings for the reason that the cutting is really a part of the old plant while seedlings are new and independent plants.

Now with these facts before us let us see how most people get their plants. I think it is safe to say that at least three-fourths of the people, even where there is a local florist, get them as follows: Mrs. A. has a fine geranium, got possibly from a local or foreign florist but quite as likely from some friend in another town in the shape of a cutting rooted or not. Mrs. B. sees it in bloom and greatly admires it. "I'll give you a slip if you wish one," says Mrs. A., gratified by her friend's ecstasies. Mrs. B. gets the "slip" rooted and beginning to grow well when Mrs. C. happens in. "Oh, what a lovely geranium." "You may have a slip if you like," and Mrs. C. goes home happy. And so on through the alphabet. One don't half water, another drowns; one starves with poor or worn-out soil, another clogs the root cells with food; one chills, another roasts; one keeps it in a dark room, another wilts it with full noonday sun. Not once only, but day after day these abuses go on. And by the time Mrs. Z. gets a slip the sins of the fathers have been visited upon the children unto the third and fourth generation. She takes good care of it month after month and wonders why it don't "do well." How can it be expected to do well when its ancestors were starved, frozen, roasted, dried, soaked and "slipped" to death generation after generation. I believe as firmly and try as hard as most any one to keep that old commandment "Thou shalt love thy neighbor as thyself," but I don't think it requires us to love our neighbors to our own ruin.

The "slips" or cuttings from any but the most vigorous plants are of very little

value in my experience, and you can greatly injure your own plants by being too generous with your neighbors, for frequent "slipping" or taking cuttings from a plant injures it greatly. Try cutting off to-day a finger, next week an ear, the week following a toe, then a hand, and so on, and see how much vigor you have left at the end of a year, to say nothing of looks.

If you want plants that will give you reasonable results for your care get them direct from some respectable florist and don't "slip" them to death. The first cost is more, of course, but the result "is more" too.

Another point to those who wish to advance a step further. I believe it to be a safe rule that all plants raised direct from *good* seed are much more hardy, vigorous, fragrant and free blooming than the same plants from cuttings. So if you want an improvement in this direction get seeds from some reliable florist and start them yourself. Of course it must be remembered that all do not come true from seed but often this does not greatly matter. Fuchsias, single geraniums, double petunias, and a host of others, may be raised from seed and with very little trouble. I have in mind as I write a boyish experiment that resulted in a geranium standing over seven feet high and covering a circle eight feet in diameter, covered with huge trusses of single bloom eighteen months from seed sowing, planted in common garden soil, and hung up by the roots in the cellar the first winter. Such plants make fine bedders as they have the vigor to stand slight frosts, drouth, hot sun and vermin.

Let it be distinctly understood in closing that I am not writing this in the interest of any florist or dealer but simply to help you earn that solid satisfaction that comes from owning thrifty, handsome, free blooming plants.

D. M. FARNSWORTH, *Marquette, Mich.*

COUNTRY PLACES—ROADWAYS.

Having an idea that the small village lot has been landscaped almost as much as is possible, it occurred to me that some of our country places might be improved at a small cost. I know one where both house and barn come very close to the

highway, with an acre, more or less, of spare land between them. There being plenty of rich land back of these, why should not this acre be clothed with evergreens, both to screen the unsightly barn premises from the house, and for a pleasure walk in winter? First, there might be for a center piece a large prostrate juniper, magnificent specimens of which grow on this same farm. Next, there should be a path around this juniper, and leading from it to the north and east and west corners of the lot, which should have seats. Of course the paths should start from the house.

On the northeast side of the lot is the barn with all its accompaniments, and on this side, and on the southeast also, I would have two rows of white pine trees set close, under which the men could go to the barn. This would be almost equal to a shed for protection. The house is on the southwest side of the lot, and the highway on the northwest side. There should be a row of deciduous trees on the highway, such as elm, maple, linden, and on the lot, and next to them, fir and such trees as will not keep the highway too cold and wet in winter. Cone shaped trees for this use are best on the sunny side of the highway.

There should be a gradation in the height of trees from the pines next to the barn to the center piece, also on two other sides, that the view from the house might be perfect. Hemlocks, which keep green all winter, red cedars and arborvitæas, which wear a brownish green in winter, and dwarf pines would make an elegant combination for this gradation. On the side next to the house the view of the whole should be as unobstructed as possible, and the lowest evergreens being needed on this side between these nearest corners. It might be supposed such a winter garden would be a delight to all, and once started, the expense is small.

Ever since I could remember anything, our barbarous highways have been objects of contempt, and all these years I have been compelled to see great trees on the highway cut down because some mercenary, merciless man claimed the right to do it. Thanks to the inventor of the first bicycle, there is hope. For the last three years the cycle makers and

riders have been imploring our wise legislators to take possession of our roads for the State and make them decent, which they are not now. They have a desire for a good road all the way from Boston to New York City, and some of the owners of fancy horses say they will join them on condition that there shall be a soft dirt road. Here are two seemingly conflicting agencies at work, but having put on my thinking cap, it seems to me that both parties might have what they want—if they can get it—by making one sidewalk do in place of two, which second one I consider superfluous. Times have changed, and sidewalks must change too. By my plan we might have an asphalt run of 15 feet in width for the wheelmen, on the north side of the road, a soft dirt roadway 38 feet wide with a row of trees on each side for the horsemen, and a sidewalk of 15 feet, on the south side, with a row of trees at the outside.

BOSTON SUBURB.

THE GERANIUM SAVED HER LIFE.

The father and brother of a dear little woman died of consumption, and she firmly believed she would soon follow them with the same dread disease. She had a friend who believed the invalid had inherited her mother's stronger constitution, and if she could only be aroused, and the idea banished from her mind that she would soon die, she might be a well woman. Arguments were in vain, and as the friend was going away for years, she gave a geranium to the dear little woman, with the request that she would take care of it, and also, that she would work out in the garden through the spring and summer two hours a day. "I might as well do it," said the invalid, "for I shall not live but a few weeks, or months at the longest." Very feeble were her first attempts at gardening and she would often say on coming in, "I shall die now, anyway." But the next day found her out again. The geranium was cared for, and gradually other plants were added. She became very much interested in gardening, and her mind was taken up reading the many good floral magazines and in caring for her flowers. In the winter a bay window was full of blooming plants. It is now three years

since she began this new cure, and it has worked wonders. She is a healthy, happy woman now and says that "women stay in the house too much, are afraid of their clothes, and the tight lacing makes a short breath, and then they say, 'we are not strong enough to work in a garden.'" Shut up the pill boxes, and throw away the bottles. Breathe the fresh air and take your medicine at the end of a light hoe handle, and see if you don't save doctor's bills. SISTER GRACIOUS.

PLANTING SHRUBS.

Many complain of losing shrubs and large plants received by express, as all the soil is taken from the roots before they are sent. One friend in particular was grieving recently over the loss of some expensive shrubs which had been planted very carefully. As several have asked me how I happen to be so successful I will tell my simple method for the benefit of the readers of "Pleasant Gossip." Don't wait until the shrubs are received before you prepare the bed for them, but as soon as the order is sent make preparations for them. Do not only remove the top soil where the shrubs are to stand, but spade the whole bed deep and add a liberal quantity of well-rotted manure and leaf-mold (if it can be obtained) and mix thoroughly; and when the shrubs arrive plant them same as you would young fruit trees. Notice the mark showing how deep they were planted before, and prepare to set them a little deeper this time; wet the roots in a bucket of water; dig the holes deeper than the roots require and pour in water, so that the ground below will be moist many inches. After the water settles place some manure in the hole and over this an inch or two of soil; lift the shrub from the bucket of water and gently lay the wet roots in position, being careful not to break the fine tender roots, as they are just as important as the large ones; after they are all arranged as nearly as possible in the same position as they were before, sprinkle fine soil over them, and then fill up the hole with the soil, pressing it down very firmly about the roots. Now cut back the tops in the same proportion as the roots have been disturbed or broken, and water freely. I have found

this method perfectly satisfactory, and out of forty-two hardy flowering shrubs, planted in one year, only two died, and they were very frail, sickly-looking little affairs when they were received by express with several large ones.

PHEBE R., *Philadelphia.*

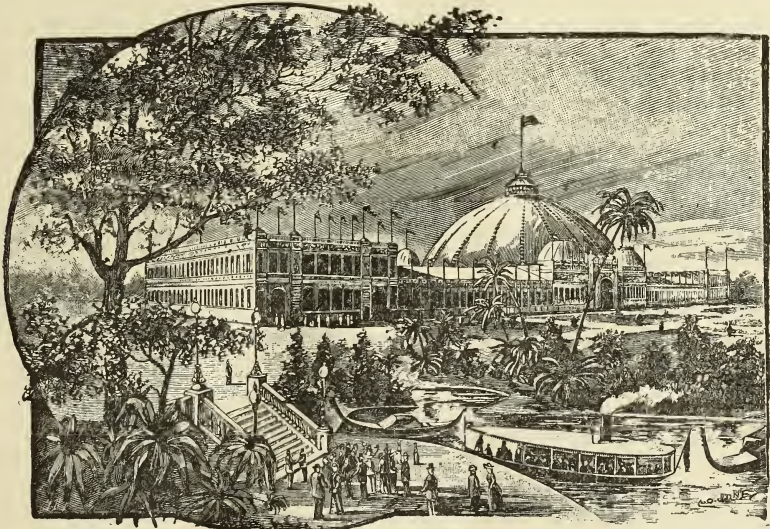
THE COLUMBIAN EXPOSITION.

Reports from Chicago show that rapid progress is being made in the preparations for the great exposition. The designs of most of the principal buildings have been decided upon, and a great deal of work on them is going forward. An engraving of the Horticultural building is here pre-

horticultural implements and appliances. The building will be suitably lighted and heated and in every way be adapted to the purpose designed. The material of the exterior is a stucco and is tinted a soft, warm buff. The appropriation made for it is \$400,000.

The building is situated just south of the entrance to Jackson Park from the Midway Plaisance, and faces the lagoon. In front is a flower border for outside exhibits of plants, and tanks for water plants and water lilies of all kinds, from the smallest to the Victoria regia.

The press of the different European countries is making known in the old



THE HORTICULTURAL BUILDING AT THE COLUMBIAN EXPOSITION.

sented. It is of immense size, being 1,000 feet long and having an extreme width of 286 feet. Its external appearance is magnificent. A central pavilion is connected with two end pavilions in such a manner as to form two interior courts each 88 by 270 feet. These courts are beautifully decorated in color and planted with ornamental shrubs and flowers. The center pavilion is roofed by a crystal dome 187 feet in diameter and 113 feet high, under which will be exhibited the tallest palms, bamboos and tree ferns that can be procured. There is a gallery in each of the pavilions.

In this building will be made the great exhibit of plants, flowers, fruits, seeds and

world all that goes on in relation to the great show and it is probable that the foreign exhibits will be full. In order to present the whole matter of the exhibition fully to foreign people and increase the interest in it, five special commissioners left New York for Europe the first week in July. These commissioners, between them, will visit the capitals and chief cities of all European nations, and will confer with government officials and such foreign Exposition Commissioners as have been appointed, and will see that they fully understand how great the Exposition will be, and that they have all desired information concerning it. The party will be abroad about two months.

NOTES FROM MY GARDEN.

The cultivation of asparagus need not be so laborious and expensive as usually recommended. From mistaken ideas in its cultivation many are deterred from enjoying this delicious vegetable from their own gardens in early spring. In the first place select a piece of ground free from sods and measurably free from weeds, because these last will hinder growth somewhat in early cultivation of the plants, but later the application of salt will keep the weeds in check pretty effectually. Make the soil rich with composted manure or that which is a year old, using ashes freely. Dig up the ground reasonably deep, say ten inches or a foot. Plant two-year-old roots about 18 inches apart each way, setting the crowns four inches below the surface. Hoe to keep the weeds down and the surface mellow. In the fall cover the bed with three inches of manure, which fork lightly into the soil in spring, being careful not to disturb the plants. Apply three quarts of salt to the square rod at the time of forking in the manure, which will stimulate the asparagus plants and discourage the weeds. The plants may be cut sparingly the second summer; cut at the surface of the ground, never below, and not later than the middle of July. Conover's Colossal is a fine variety, as also Barr's Mammoth, a new sort and likely to prove satisfactory.

Farmers in making up their orders for fruit trees should make it a point to remember the æsthetic side of farming, and give beauty and adornment to the home surroundings by including in their orders three or four ornamental shrubs or vines. Money is well spent which adds to the beauty and attractiveness of an estate. A bed of roses, or a climbing vine upon the wall or porch, are things to be admired and may be a profitable investment.

A good kitchen garden, in which the owner, by judicious selection, has in variety a bountiful supply of our best garden vegetables, is an adjunct to the living supplies of no mean account financially, and of no less account considered in point of healthful diet. If a farmer lives near a village, especially one where manufacturing industries are carried on and large numbers of operatives are employed, he may dispose of cabbage, green

corn, peas, roots, and other vegetables, with profit.

With the first-named vegetable, cabbage, the plants should be started in the kitchen early, say the first of March, and when the weather gets milder prick the plants out in cold frames, and later in the open ground. The Early Wakefield is a good variety and early, to be followed by Henderson's Early Summer or Fottler's Improved Brunswick.

Those living in the vicinity of any considerable market can make green corn a profitable crop. It is surprising how much can be realized from a small plot of ground well taken care of, and by planting seeds of varieties which follow in an appropriate and close succession. The proper thing to do is, first, to select a warm, friable soil; if of light texture it will forward the crop best—and earliness is a requisite not to be overlooked, for generally there is fully 75 per cent. difference in price between the first and last pickings. Put on a good coat of manure—if undecomposed all right, if some good chemical fertilizer is freely used—sow on a liberal amount of superphosphate, and plant as early as danger from frost is passed.

For varieties, no sort I have tried gets ahead of the Cory or is liked better for a first sort. The Early Minnesota comes next, and is called the sweetest variety grown for market. Then follows Shaker's Early and Russell's Prolific, and for a late sort, if the extent of ground will admit of so many varieties, Perry's Hybrid or Hickox Improved.

It will pay to look closely to these garden matters, for frequently a small plot of ground in garden vegetables may yield larger cash returns than a whole field in farm crops.

L. F. ABBOTT, *Lewiston, Maine.*

THE SEWAGE OF PARIS.

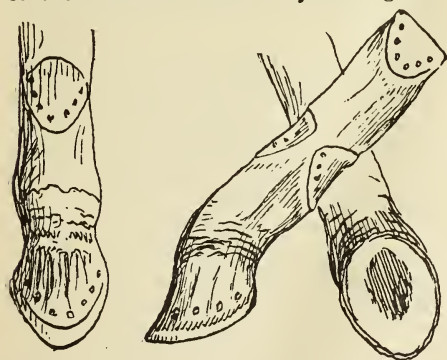
Dr. ALBERT SHAW in his very excellent article on Paris, in the *Century* for July, makes the following statements about the sewage of the city:

Paris, like all other great cities, has been much concerned with the question how to dispose of sewage. At present most of the outflow of the collecteurs pours into the Seine, to its serious pollution. But some years ago the municipal-

ity purchased several thousands of acres of land in the plain of Gennevilliers, a few miles down the river, and began the experiment of a sewage farm. The project has been an unqualified success. An extension from the Père-Lachaise-St. Denis collecteur carries a large quantity of sewage to the farm, where it is used by irrigation as a fertilizer, with the best of results in every way. At present one-fifth or more of the total sewage effluent of Paris is used on the land at Gennevilliers; and in due time the whole quantity can be diverted from the river to this and other tracts of land which have been selected as suitable for the purpose.

A HORSE-CHESTNUT CURIOSITY.

In the spring, before the horse-chestnut trees had put out their leaves, a friend called our attention to the appearance of the shoots of the previous year of this tree, where the scars remain, showing the place of the leaf attachment. By cutting the



twigs skillfully in the manner shown in the engraving a very fair miniature model is made of the lower part of a horse's fore leg and foot, showing above, the nail heads, and on the foot surface, the frog, this last being the darker, older wood and which is surrounded by the whitish new growth of the last year, like the white hoof after the blacksmith has pared it.

In our friend's letter, accompanying the specimen he sent, occurs this statement: But few, if any, botanists know why the name "horse-chestnut" was given to the tree which bears it. Each year's growth develops a perfectly formed horseshoe on every limb, representing the seven nails, and the perfect foot and hoof of a horse.

This explanation is very ingenious but not at all probable. The distinctive appellation "horse" is applied to many

plants to indicate size, coarseness, and sometimes a rank taste; thus we have Horse Balm, Horsemint, Horse Nettle, Horse Radish, Horse-tail, Horse-weed, Horse Bean, Horse Thyme, and others. The name horse-chestnut undoubtedly comes from the large nut with its strong, bitter meat which but few animals can eat. Nevertheless the little shoot skillfully cut is an interesting object.

SOW-BUGS EATING PLANTS.

In the last issue of "Insect Life"—a double number, 9 and 10—an account is given by W. G. WRIGHT, San Bernardino, California, of sow-bugs eating plants. One case is that of a cactus which was so eaten by the bugs as nearly to ruin it; another was a wistaria which had been recently purchased and had been heeled in for a few days previous to planting. When removed it was found to be swarming with sow-bugs, and all the buds on it, which had apparently been starting, were eaten off. It has been supposed that sow-bugs were wholly carnivorous but these statements show otherwise.

G. A. R. FLORAL DECORATIONS.

The National encampment meets in Detroit in August and the various committees are straining every nerve to be equal to the occasion. The several parks are making much of set floral pieces. Woodward Avenue, the main thoroughfare of the city, runs through the Grand Circus Park, and on the grass plat on each side of the street are wonderful floral designs. The name, Woodward Avenue, in immense letters stretches along one whole side. Back of this is a large American flag and a mound twenty feet high. On one side is the head of George Washington. His imposing gray hair is represented by small echeverias, and his face by different colored coleus. The "Father of his Country" looks benign but puzzled to find himself "done" in small plants. An eagle also, with outstretched wings, thirty feet from tip to tip, is composed of three thousand plants. An immense shield has the word "Welcome" across the front. The outlines of the designs were made by a small line of white oyster shells ground fine and shaded by coal dust, and following the lines were the plants. Up-

wards of ten thousand plants have been used, and as floral decorations on so large a scale are new, the fifty thousand strangers expected will perhaps be amused and astonished, while the florists may earn a pretty penny. After all, these designs have a stiff look and heaven forbid they be generally copied for private lawns and gardens. But for grand and unusual occasions they serve to interest and attract a crowd.

SISTER GRACIOUS.

NOTES AND GLEANINGS.

California is a veritable fairy land of flowers to all of us who do not live there, and I have been much interested in an account of the chrysanthemum exhibition given in San Francisco, last November, by the State Floral Society. California ought to be satisfied with her wonderful roses, it seems to me, without trying to eclipse everybody else's chrysanthemums. Even the capricious Mrs. Alpheus Hardy grows marvelously for them there, and amateurs are as likely to get gold medals as anyone. Somebody insists that there has been a mistake in naming this Mrs. A. Hardy, because instead of being hardy it is the tenderest chrysanthemum she ever saw!

A new striped rose was shown at this exhibition which originated in California. It is a sport from Papa Gontier, and is named "Rainbow." "The flower is noteworthy as showing a new shade of pink, lighting into yellow at the base of petals, and streaked with broad bands of crimson." It is some comfort to know that, after all, it will have to play second fiddle to Vick's Caprice.

The Indiana florists also gave a chrysanthemum show during November last and the one hundred dollar prize offered for the best new named seedling, not yet disseminated, was won by FRED. DOERNER, of Lafayette, Indiana. The winning seedling was a large, finely formed, incurved flower named "Mistletoe." "Inside color a very rich, dark maroon, outside a silver white with fawn shadings, combination exquisite."

Those who have large and fine collections of lilies would do well to guard against the disease which in England and portions of this country is making havoc of that beautiful flower. *L. auratum* is

one of the most subject to it. That "king cure-all," the Bordeaux mixture, is said to be good for it, and so is sulphite of iron mixed with the top-dressing of the soil, a pound to a wheel-barrow full of earth.

I sometimes think Mr. VICK's Pleasant Gossip is the pleasantest room in his house. You come through the more formal, high toned parlor and drawing-room first, on into the cozy sitting-room, where there is a big fire with broad fender to toast your toes on. The sun always shines in here, and you can pull the arm chairs up as close as you want to for confidential chat, and are not afraid to say things for fear of displaying your ignorance.

Did anyone ever try growing crocuses in bulb pits or windows to hurry them into bloom? It doesn't do one bit of good, those out in the yard will bloom first! I have tried it three years, and this year when February 10th my crocuses bloomed on the lawn while those in the pit were just up, I took them all out and made a procession of them in the grass.

Florists and knowing amateurs have a great deal to say about using small pots, and one year, a good while ago, I invested in a stock of them. I nearly used up all my energies watering plants that year, and lost an unusual number too, and finally made up my mind that I had no use for a pot smaller than six inches. I have been taxing my ingenuity to find a use for those pots lately, but can hit upon no more brilliant ideas than their being broken up for drainage, sticking inch-long cuttings in, or shading tiny plants with them.

I had some Paper White Narcissi in bloom last winter that were as dainty and fragrant as blossoms well could be. They averaged sixteen flowers to a stalk, and were such a pure pearly white. Mine bloom about the first of February, usually before the hyacinths, or about the same time with Roman White Hyacinths. They are the loveliest of all their family.

My callas "struck" on early blooming this year, all because I tried bedding them out last summer. I had always dried them off before and had an abundance of large blooms all through the winter, but I wanted to try the perpetual growth plan,

and to see how large they would grow. They were splendid crowns, some of them three inches thick, and the leaves were some of them as large and tall as a caladium's, but they wouldn't bloom, no, sir! hot water, fertilizer, nor any other blandishment would not get a blossom. After they went into winter quarters they simply stood still and sulked till I took them up and wrapped them in dry moss, and late in spring they begged for a drink again and bloomed.

Even the Tea roses are hardy here and I did not know that late blooming roses were such an unusual thing, until Mr. T. H. MACK lately immortalized himself. Why, dear me! we have them in December nearly every year, and a faithful old Pink Daily, which is as handsome as any of the Tea roses with the daintiest possible buds, starts out its leaves and flowers often in February and trails pink and green garlands over second story, south windows, and this isn't California or Florida either.

What a fine old rose is the *Mycophylla*! JOHN SAUL of Washington catalogues three varieties, red, white and pink, but I have seen only the white—*alba odorata*. It has small, persistent, evergreen foliage, bright and glossy, a profusion of the sharpest thorns, and is gemmed all summer with large, creamy white flowers, full and sweet, with a gloss like satin. Its chief fault is to overcrowd itself with buds, which are apt to blight during long rainy seasons. It is a climbing rose and the southern side of our houses is thus banked in evergreen every winter.

I wish the MAGAZINE would give us, as some other horticultural journals are doing, bits of biography and photographs of some of its contributors. I specially want to know something about L. B. PIERCE, and E. S. GILBERT. L. GREENLEE.

CLEMATIS COCCINEA.

Being an old subscriber of your MAGAZINE, and in reading what one of your subscribers writes of *Clematis coccinea* I felt as though great injustice had been done thereby to a vine which I am very partial to. I wish you could see and judge how very beautiful it is. The vine covers a trellis at the east end of our veranda, and is literally covered, from the ground

to the top, with beautiful, bell-shaped flowers and seed-balls or pods. It has been blooming since the latter part of May, and will continue to do so until late in autumn. I have only written this in justice to a lovely vine. I give it a good bed of manure in the fall.

MRS. C. C. DEWEY, *Canton, Ill.*

FAILURE AND SUCCESS.

"If at first you don't succeed try, try again," is pretty good advice for the amateur florist. I have so many times succeeded with certain "difficult" plants after repeated failures, that I am encouraged to keep right on trying with any and every stubborn plant that I attempt to grow, for do you know plants are like people, and all have their "right" side, if only one has the tact and perseverance to find it.

Now I have persistently cultivated the *mahernia* for three years, coaxing it along as best I could, but the sullen thing would never grow for me, but would, after resisting all my efforts for its improvement for a month or two, just die, then I would get another and try again, and now I have, in a hanging basket in my conservatory, as thrifty a specimen of *mahernia* as one would wish for. I got it early last spring and set it in the ground as soon as it was warm—about the middle of May; the soil had been well enriched, and it settled down as contentedly as possible and grew beautifully all summer; the first of September I potted it in the hanging basket holding about two quarts, still giving it rich soil and plenty of water and left it out of doors until the very last of September, then hung it in the conservatory window close to the glass, and it is most amiable, spreading itself in every direction, so I feel amply repaid for all my trouble with the "dead and gone" plants.

Then another experience I had with a *Metallica begonia* has been quite interesting. I started a cutting of it and after it was rooted it grew to be about six inches high and then sulked. I tried new soil for it, and all the things I could think of, but no, it was quite on its dignity and seemed to say "all I ask is to be let alone," and after two years of such actions it commenced to grow and blossom, and grow, until now it fills the lower half

of a large window, and is the most beautiful thing in all my large collection of plants, so beautiful that a gentleman asked the privilege of photographing it, and did so; and of course all the ladies who see it want cuttings of it, and every branch is so full of the waxy pink clusters of blossoms I am "distressed in my heart" every time I break one off; but I never refuse cuttings to my friends, even if it takes the last blossoming branch. I think that is one of the pleasures of plant growing, to share your treasures with your friends; but I must admit that there are some "slip fiends" abroad in the land—have you had any experience with them?

MIRIAM PARKER.

SOME ROSE NOTES.

About a year ago I wrote an article raising a query about "One Rose or Two," in which it was stated that the Dinsmore and Madam Chas. Wood were so exactly alike in flower and bush that they could not be distinguished the one from the other. And this was true and remains true of large bushes in my garden; but this season I have handled large numbers of both sorts in small sizes—three or four-inch pots—and therein the difference proves to be very marked, the plants having but slight resemblance in several respects. The chief point of difference, however, is that almost every little Dinsmore throws out buds on every little shoot, while the Wood does not begin blooming so early. It is now quite clear to my mind that the two roses are entirely distinct.

While the present season is one of very prolific bloom among the roses here, there has been one feature quite annoying. The season has been rather wet, and the growth has been very vigorous, and such roses as Madam Wood, Dinsmore, General Washington, and others of the large, very double sorts, have produced great supplies of enormous buds as hard as cabbage heads; but most of them have failed to open, finally bursting loose at the base if not cut off. I cut nearly all of mine off, to save the strength of the plants for the later bloom, which is coming out better.

One of the most singular freaks I have ever encountered in roses has lately de-

veloped in a Moss rose bought five or six years ago. It is a white variety, very mossy and blooms in clusters. Or, at least it *was* a white variety for the first few years, never showing any disposition to sport. But it became too large for the place it occupied and a year ago I moved it to another place. Last summer it threw out a short branch on which were beautiful light pink *moss* roses. This spring a branch more than a foot long of last year's growth produced abundance of nice pink roses *without a particle of moss*. And although this branch grew directly out of the side of a very thorny, mossy cane well above the ground, it was only moderately thorny, and now, July 12, has second crop roses and buds on it.

The roses that have been most universally admired, in my garden this year, have been Magna Charta and Helen Stewart, the former for its grand bloom in size and color, and the latter for its brilliant color and delightful perfume. The only fault I find with Magna Charta is that it has never bloomed but once a year for me.

My Vick's Caprice, put out this season, is growing vigorously, but shows no sign of blooming. Shall expect it to show up finely next year.

I tied my large bush of Madam Plantier up to a pole five feet high in pyramidal form, this spring, and when it bloomed it was a picture. If Madam P. only bloomed through the season how I should love her.

THEO. H. MACK.

AQUILEGIAS.

The colored plate of the present month shows a beautiful form of aquilegia which was found three or four years since in bloom on our grounds. We do not know its origin, but judge from its appearance that it is a hybrid between *A. cœrulea* and *A. chrysantha*. It is well known that these species hybridize freely and some beautiful varieties have been derived from them. One of these called Alba is somewhat similar to the one here shown, except that it is smaller, and is white, not having the rosy tints of our form. By systematic hybridizing the species mentioned some remarkably fine varieties could undoubtedly be obtained; the attempt is worth making.

AUGUST WORK.

This month there is plenty to do in the out-door garden, and there should be plenty to enjoy in flowers, fruits and vegetables. In the early part of the month spinach seed can be sowed for using in the fall, so, also, radish and cress. The winter radish can also be sowed for winter use. Cos lettuce sowed now will make good heads for fall.

Many kinds of flowering plants can be propagated quickly at this season. Sow seeds of mignonette for winter blooming. Geraniums for the window or greenhouse in winter can be repotted this month, cutting back the tops, reducing the ball of earth and giving fresh soil and pressing it in firmly with a stick; water gently for a few weeks until growth starts vigorously. Repot callas, giving them all fresh soil; as soon as growth starts give water freely.

In a cool, shady border, where water can be supplied, many kinds of perennial seeds can be sown now and be brought forward so that they will be sturdy little plants by winter. Pansies, Sweet Williams, pinks, Chinese pinks, hollyhock, columbine, larkspur, Canterbury bells, foxgloves, and others may be started.

The garden now should appear at its best, without weeds, and neat in every part.

JONQUILS—DAFFODILS.

A correspondent at New Bedford, Massachusetts wrote us on the 18th of April last, saying:

Last fall I reset a lot of white jonquils which had become too crowded, and now these very plants are in bloom as the yellow daffodil. Is this a very common or a very uncommon occurrence? Please say if you ever had such an experience or ever heard of such before.

We have never had anything of this kind in our experience; if any of our readers have it will be interesting to hear from them.

SUMMER NOON.

Deep in the cooler shadows of the wood,
Where the shy thrush trills soft his ode to love,
And winged elves hum through the solitude
The sleepy idyls of the sacred grove;

There, on the mossy sward, do thou recline
And note how Summer from her liberal store
Arrays her beauty, artisan divine,
Each charm more gracious than the one before.

The rabbit cuddles 'neath the dock's ribbed-leaves,
Above the bough the sleeping squirrel lies;
The quail is silent 'midst the golden sheaves,
The vagrant zephyr in the forest dies.

The nodding flowers that droop with noontide heat,
And blush with all of morning's rosy hues,
Unstop their vials, brimmed with every sweet
Distilled by dusky Night from all her dews.

It is the month for dreaming drowsiness:
Among the shadows of the broad-leaved linn
Bides Mother Sleep, whose hand the toilers bless
Who glean the fields, while soft, she laps them in.

The aspen with its thousand twinkling leaves,
The wizzard-elm, the acorn-jeweled oak,
The pend'ulous willow where the oriole weaves,
The poplar sacred from the thunder stroke,

Their offerings bring, and on the altar lay,
There Nature's priest, bared head, his feet unshod,
Reads the sweet oracles that point the way
Up Nature's paths of life, to Nature's God.

E. B. H.

A BIT OF HEAVENLY BLUE.

When clouds o'erhang your pathway, friend,
And many are your cares,
And, with discouraged heart, you find
No answer to your prayers,
Remember there are always flowers,
Somewhere, of lovely hue,
And, somewhere, shining in the sky,
A bit of heavenly blue.

Our world would be a dreary place
If this, friend, were not so,
And even Hope would droop her wings
Beneath a weight of woe;
But, thank God, there are always flowers,
Somewhere, of lovely hue,
And, somewhere, shining in the sky,
A bit of heavenly blue.

MARGARET EYTINGE.

**SUMMER MORN ON THE PRAIRIE.
A SONNET.**

The East is kindling with the coming day;
A soft breeze stirs the prairie's glistening plumes;
The fragrant phlox the dawn's first kiss illumines;
The sunflower lifts his face to greet the ray;
And the wide levels don their garments gay.
Bright and yet brighter, as the shining comes,
Blushes the landscape, balmy with perfumes,
And now a note gives voice unto the gray;
Swelling anon into a rapturous song,
As the lark shakes his feathers, and the choir
From all the verdant slopes, with one desire
Join in the music, and the scores prolong;
Ere dies the hymn that lately was begun,
The East all glorious, gives the risen sun.

EDWARD B. HEATON.



OUR YOUNG PEOPLE.

NIP AND TUCK.

IN TWO CHAPTERS—CHAP. I. *

The Controlling Committee of The Fresh Air Fund had just left their treasurer alone in his office. That big-hearted man at once turned his thoughts toward trying to solve the problem why the number of country-famished children must always so exceed the possibilities of the Fund—the more money the more children, it seemed—when the quick pat of bare feet and a childish voice aroused him.

"See yer, Colonel Borton, I jes found this kid out yer, an' he 'lows he wants some fresh air fun, too. Says his name is Nipper Stokes, an' ef you'll jes write it down 'long o' mine—mine's Tuckey Blike, you know, Tuck fer short—why, him an' me kin be pard; I'll take keer of him."

"No, you wont!" retorted the animated bunch of tatters referred to, "I kin take keer o' myself—I'll show you;" and he squared off like a flash and gave his would-be patron such a blow in the face as sent him backward on the floor with a thud.

Springing up, Tuckey paused not to wipe his bleeding nose, but rushed at Nipper as if to annihilate him that instant. But Nip was ready, and parrying his blow, tripped Tuck off his feet, and jumping on him commenced a series of poundings, quite worthy some long-fostered revenge.

At first, Col. Borton had thought to himself, "It's 'nip and tuck' sure enough;" but soon discovering it was mostly Nip and very little Tuck, he sprang up and pulling off the young pugilist gave him a good shaking, while exclaiming:

"You young ingrate! is this the way you return a kindness? Tuckey was trying to do you a favor and befriend you."

"Well, then, what'd he pitch into me fer, when I was only jes showin' him that I kin take keer o' myself?" Then turning, he sneeringly called out—"Say, Tuck, d'ye think now I need somebody to take k-e-e-r o' me?"

"You bet I do, the very wust way."

"Yes," said Colonel Borton, "you are

in great need of somebody to take care of you, and to teach you, first thing, that though a boy may act like a brute, there's a wide difference between the two, really."

"Yes, I know. A brute's got four legs. Two's all I want."

"I don't mean that at all. Listen. A brute can't change himself into anything higher or better than what he is. Suppose he had the will to do so, he could never, by any possibility, transform himself into a being of superior order. All his life he's obliged to act out his brute nature. He cannot rise. But a boy, now—a boy like you—isn't bound down like that. He can improve himself, and continue improving until he may finally grow into a man like—well, for instance, like the mayor of our city; and be looked up to and respected by everybody."

"*Me?* did you say a boy like me kin grow into a man like the mayor? By crackey!"

"Yes, that's what I said. What hinders? Or, you might try for a man like me, if my make-up would be easier to reach."

Nip looked Col. Borton all over—up and down, down and up; and then glancing around the comfortable office, said:

"'Twould be a plaguey sight easier. The mayor's awful high an' mighty. Anyway, to be like you'd be good enough.—Je-whillikins! But how can a feller begin?"

"You'll have to quit rough talk and rough habits—no more fighting, bullying nor loafing around."

"Can't quit that where I live. Why, you'd be killed if you didn't jes fight yer way, every day, all the time."

"In what part of the city do you live?"

"In Tophet, if you know where that is."

"I've heard of the locality. That's where a mission was established."

"Not much. We stoned 'em off. Perlicemen come to help 'em. But we's watching for 'em. More'n a hundred o' us billies rushed onto 'em like a swarm o'

rats. We jes rained stones an' mud an' brick bats at 'em an' druv 'em off; an' they staid off. They darsent shoot into a crowd o' youngsters, nohow. No, they darsent. An' there's too many of us to be 'rested. So we beat 'em."

"And now you're willing to leave all that and try to make a man of yourself?"

"I'd as lief."

Hereupon, Tuck, having got his bloody nose dried off, interrupted with—"See yer, Nip, if you're goin' to make fer Colonel Borton I'll strike out for the mayor, I will."

"All right; rip away. How's yer nose? You ortent to insult a feller the way you did." Then turning to Col. Borton Nip said—"I wont know how to get my grub. Must I quit stealin' when I'm hungry?"

"You certainly must;" answered Col. Borton, now thoroughly dismayed at the depravity developed by this young embryo of his prospective duplicate.

"You certainly must," he repeated; "but, if you are in earnest about beginning a new life, I'll show you how to earn enough before supper to pay for it; and then you must keep on earning right along."

"By jinks! that'll be jolly."

"Here are four cents for your capital to start out on. Tuckey will show you into the office of the *Evening Post* in this block. They have a corps of newsboys with the name of the paper on their caps and they'll sell you none unless you hand over this note I've written. When that's been read you can get two copies of their paper for two cents each, and I'll buy them of you. Now we'll see what you can do."

When the boys returned Col. Borton paid Nip three cents apiece for the papers, saying—"Now you've increased your capital to six cents. Hurry back and buy more papers; you'll have to rush business lest everybody be supplied before you've made enough to stop on. Carry papers into all the rooms of this building. Tell the occupants that I sent you, or they wont buy of such a grimy ragamuffin."

At this Nip squared off again, but quickly subsided, saying—"I wouldn't take sich gab as that off'm anybody but you."

"I wonder why? Aren't you dirty and awfully ragged?"

"But I aint a muff nor a muffin neither."

"No, you're a newsboy. Be off with

you now. I've something good to tell you when your next papers are sold." Then turning to Tuckey, who was becoming dazed with a new-born commercial ambition, he said: "You, Tuck, may go home now and help your mother with the sick baby. Tell her how you picked up a Tophet boy and how you've helped to start him in business. And remember to be on time for your 'fresh air' outing."

"Yes, sir." The last words dispelled his immediate longing for commercial life, and sent him off with flying feet.

Presently Nip rushed in out of breath, saying—"Here's nine cents I got for three papers. Now, when I buy four papers there'll be one cent over. What'll I do with that?"

"Save it till you've earned a mate to it. Figures are curious things. Another odd cent will turn up if you keep steadily on; and then you'll put the two together and buy an extra paper."

"I'll do that. Now what's that you're goin' to tell me?"

"It's this. If you can sell two more lots of papers you'll have nineteen cents. Then I'll take you to the Newsboys' Mission Rooms where you can get a bath, your supper, a clean bed and your breakfast for ten cents. Then you'll have nine cents left to commence business on tomorrow. You can buy morning papers, and begin early. But this is not all. At the Mission Rooms they'll put you into a good suit of clothes after your bath, if I recommend you, and I think I can."

"Yer right; you kin recommend me. I aint goin' to run away with them good clo'es."

"What made you think of such a thing so quick?"

"Kase all o' them fakes in Tophet'd think I was a greeney not to do it. They'd peel 'em off'm me double-quick if they'd ketch me with 'em on. They don't allow anybody to wear fine toggerly there. They'd raise a yell and go for 'im. The best feller'd git 'em an' barter 'em off. But, hookey! I must git."

"For what sort of things would he barter them?" asked the Colonel, as Nip rushed for the door. The answer came back: "Tangle-legs an' opium."

"What a schooling in vice that boy has had!" ejaculated his benefactor; "and

yet the germ of desire for something better is not extinguished."

When Nip had sold his next four papers he took no time to report, but with his twelve cents in hand (besides the odd one) he immediately bought six more.

In less than a minute after he had landed in the street again Col. Borton heard a panting voice at his door scolding out: "Them cussed paper boys 's gettin' mad at me. See how they've yanked my rags till I'm naked. Kint I fight 'em when they bluff me?"

"No; show them the placard the *Post* man gave you. Why don't you stick it in your hat? You can't? Sure enough. Come here; I'll pin it on. Wait; I'll pin up this big tear. Now run. If the boys bother you, tell a policeman; he'll settle them."

Nip's activity and seeming success had begun to disturb the regular newsboys of that locality. Considering him an interloper they decided to run him off. So upon his next appearance they met him with a yell of "Ragbag! Ragbag! Hurra for the champion Ragbag."

Nip stood still and gazed at them for an instant so hot with rage he could hardly see. Then remembering his instructions, also the good suit he should be able to show them in the morning, he pointed to his hat, then to a policeman—whose attention was already arrested by the noise—and hurried off with his papers, the policeman buying two of him at once in return, he said, for his quiet, manly conduct when assailed.

This remark was not lost upon Nip. "I'll bet it's goin' to pay not to fight," he reflected. Selling these two papers so easily was a great lift, for the buyers were scattering to their homes rapidly. But Nip didn't realize that his parti-colored tatters, fluttering as he ran, made him a genuine curiosity and helped to sell his papers. But he did realize that, sooner than he had expected, he was sold out.

With his heart leaping in a tumult of joy he bounded into Col. Borton's presence, slapped his nineteen cents on the table before him, gave a little shout of "I've done it! I've done it!" and then executed a series of somersets over the floor in continuous revolutions, until the excess of his exuberance seemed to be expended. Then he sprang up saying:

"I'm so happy I feel like I'd bu'st."

"You have reason to be happy," responded the Colonel, "you've really done wonders. But before I take you to the Newsboys' Rooms I must tell you that if you go in there as one of them, you'll have to learn to read and write. Kind ladies are conducting a school for boys like you. Do you think you can settle down to steady business like that?"

"I know I kin, schoolin' is what I want."

"Very well, then, we'll go;" and the office door was locked and the two passed down into the street,—a study for both men and angels.

When Nip found himself confronting a mirror in the bath-room of his new quarters, he was at first transfixed by full view of his dirty, tattered image. But recovering his wits, he lustily shook his fist, exclaiming: "Mebbe you think you're Nipper Stokes! You'll find out yer mistake, directly. Good-bye, you ornery mud-snipe; nobody'll ever see you ag'in."

When a bath, trimmed hair and fresh clothing had completed his transformation, Nip rushed to the mirror and was again mute with astonishment. Regaining his speech he said exultingly—"Didn't I tell you!"

"It was not him you told," said his amused patron, looking in at the door.

"That's so; 'tother feller's slunk. Hip, hurrah! but hold on; I mustn't turn somersets now, must I?"

"No, you must *act* as that new boy *looks*. Now, come; and I'll see you seated at your supper."

Some thoughtful woman had sent flowers for the table and there was a bouquet at each boy's plate. The sight of them electrified Nip. He had never seen a flower in Tophet. On the street that day his eyes had lingered upon the few displayed in show windows, and had followed longingly those in moss baskets borne by flower-girls. Now he had some for his very own. Must he eat them? he wondered. They were a part of his supper. But O, they were too pretty to eat. He'd wait and see what the other boys would do with theirs. And now Col. Borton was bidding him a kindly good-night; and Nip, well content, was left in this homeless boys' paradise.

MARIA BARRETT BUTLER,

HERONS.

The birds called Herons belong to a number of species, although they are of one family, and they are considerably different in appearance and bear different names, such as Egret, Bittern, Boat-bill, Great Blue Heron, and numerous others; the Ibis also is classed with them. They are found in parts of Europe, Asia, Africa, Australia and America.

by sovereigns of oriental countries; the Ibis wears a coat of brilliant scarlet feathers.

The herons are strangely formed birds, having exceedingly long legs, and long necks and bills, and comparatively small bodies. When standing or walking the neck is gracefully curved, but when flying, the legs and neck are stretched straight out.



Some kinds build their nests in the tops of large trees, while others prefer a lower site and place them down among the rough shrubs. From four to six eggs of a sea-green color are usually laid in a nest. A full grown bird measures in height three feet, and the expanse across the wings is about six feet.

The plumage of the various species is different in color; of most of them it is of subdued tints, gray and white being the principal combination. The Great Blue Heron, a native of this country, has blue plumage; the Egret is snowy white and its feathers have been used as ornaments

The food of herons consists principally of fish, and the birds will stand on the banks of a river or stream watching for their prey, or wade knee-deep in the water waiting their chance, and when a fish appears, plunge in their long necks and seize their victim.

M. E. B.

EDITOR'S MISCELLANY.

AMERICAN POMOLOGICAL SOCIETY.

The twenty-third biennial session of this society will be held in Washington, D. C., in September next, from the 22d to the 25th days inclusive. No direct notice of this meeting has been received from the officers of the society, but we hope the omission, or oversight, does not indicate either negligence or loss of interest in the society on their part. For nearly half a century the American Pomological Society has done great service to the fruit-growers of this country, and it is hoped that its usefulness may be maintained unabated through the coming years.

SOCIETY OF AMERICAN FLORISTS.

This society will hold its annual meeting at Toronto, Ontario, on the 18th, 19th and 20th of the present month. Very complete arrangements are being made for an interesting and profitable meeting, and a large gathering is expected. On most roads there will be reduced rates of fare. Dutiable articles intended for exhibition will be admitted free. Information in regard to the society may be obtained by addressing the secretary, W. J. Stewart, 67 Bromfield Street, Boston, Mass.

THE CAULIFLOWER.

A very neat handbook of 230 pages comes to us with this title. It is written by A. D. Crozier, and published by the "Register Publishing Company," Ann Arbor, Michigan. Examination of the book shows it to have been prepared by one who is thoroughly acquainted with the cultivation of this choice vegetable; all the details of its management are carefully given, together with a great amount of useful information in regard to varieties, and the cauliflower regions of the United States, and insect and fungus enemies. Whoever wishes a very full knowledge of the cauliflower and how to raise it can, for a single dollar paid for this book, put themselves in possession of it.

AN HONEST HYPOCRITE.

The agitation in the religious world has now come around to the point which is treated in "An Honest Hypocrite," a novel of more than ordinary power, by Rev. Edw. Staats DeGrote Tompkins, published by the Cassell Publishing Company. The book is the work of a clergyman who sympathizes with the broader doctrines that are prevailing to-day, and who has put his views into the form of a novel for the sake of giving them wider currency than they would have if put forth as either essay or sermon. The crying need of the poor in great cities is one of the questions agitated in this book. "An Honest Hypocrite" is full of plot, dramatic in action and in sympathy with the great movements of the day.

DESTROYING THE ROSE BUG.

The *Rural New Yorker* has made a very important discovery of the value of hot water in destroying the ravenous rose-bug, *Macrodactylus subspinosus*. It is sprayed on the insects, or the plants or trees infested by them, heated sufficiently to be at a temperature of 130° when it reaches the insects. This kills them instantly, and does not injure the foliage.

SWEET POTATO, GENERAL GRANT.

Those of our readers who have wished to procure this variety may be pleased to know that about the first of October they can procure it in small quantities by applying to H. Kern, Germantown, Ohio.

Twenty-five cents, with an order for it, enclosed in a letter to the above address will secure a tuber.

PUBLICATIONS RECEIVED.

CONTRIBUTIONS FROM THE U. S. NATIONAL HERBARIUM. VOLUME 2, No. 1. ISSUED JUNE 27, 1891. MANUAL OF THE PHANEROGAMS AND PTERIDOPHYTES OF WESTERN TEXAS. By John M. Coulter.

This number consists of the Polypetalæ. Published by authority of the Secretary of Agriculture, Washington, D. C. It is particularly gratifying to be put in possession of a flora of the southwestern part of this country, and especially one prepared by the authority named above. The succeeding numbers will be looked for with interest. In a prefatory note the author states that "the purpose of this manual is to bring together and make easily accessible our scattered information concerning the flora of Western Texas. It is one of the richest regions in plant display, containing a flora particularly interesting on account of the intermingling of Mexican species, and very poorly provided with accessible information." It is stated further that "the work has been prepared not only as a convenient reference book for botanists, but also as a hand book for Texan students."

CATALOGUE OF ECONOMIC PLANTS IN THE COLLECTION OF THE U. S. DEPARTMENT OF AGRICULTURE. By William Saunders.

This publication of the Department of Agriculture consists of descriptions of 431 economic plants at present contained in the collection of the Department. The information is valuable to those wishing to know about the plants.

A REPORT ON SISAL HEMP CULTURE IN THE UNITED STATES, WITH STATEMENTS RELATING TO THE INDUSTRY IN YUCATAN AND THE BAHAMA ISLANDS, AND BRIEF CONSIDERATIONS UPON THE QUESTION OF MACHINERY FOR EXTRACTING THE FIBER. By Charles Richard Dodge.

This is a special report to the Department of Agriculture on Sisal hemp cultivation in Florida. The so-called Sisal hemp is a variety of agave, *A. rigida*, variety *Sisalana*. The report is very full and is illustrated with several plates and engravings.

EXPERIMENTS WITH SUGAR BEETS IN 1890. By Harvey W. Wiley.

This report to the Department of Agriculture through the Division of Chemistry gives all the latest information on the manufacture of sugar from beets in this country, together with much that is valuable in regard to raising the beet. An appendix consists of Notes on Sugar Beet Culture in France and Germany.

From the Director, John A. Myers, of the West Virginia Agricultural Experiment Station, we have lately received the "Third Annual Report" of that station. The report is quite full and contains much that is interesting. C. F. Millsbaugh, M. D., the botanist and microscopist of the station, explains the use of photography in the work of the station, and gives, with considerable details, the methods of operating, well illustrated with engravings. It is evident that photography may be made a valuable adjunct in much of the work of experiment stations. The department of Entomology, in charge of A. D. Hopkins, is ably reported. The creamery industry of the State is, apparently, of the greatest consideration at this station, and it receives corresponding attention.

OCEAN BREEZES

Are refreshing, but they cannot make pure blood or renovate the system. Without this being done, the effect of a visit to the seaside or the country is merely transitory. The old headache, weakness, dyspepsia, or rheumatism comes back with the return to city life. The one thing needed is pure, vigorous blood, and this can best be secured by the use of



Ayer's Sarsaparilla

It purifies and vitalizes the blood, assists digestion, aids the liver and kidneys, and imparts permanent strength and vigor to both mind and body.

"For over twelve months I was afflicted with general debility, headache, and loss of appetite, followed by chills. I was scarcely able to drag myself about the house, and no medicine did me any good until I began to take Ayer's Sarsaparilla and Ayer's Pills, since which time I have entirely recovered my health and strength."—MARY HENRICKON, Park st., Ware, Mass.

"I was troubled from childhood with headaches, and could find nothing to relieve me, till, about two months ago, I began to take Ayer's Sarsaparilla, since which time I have been entirely cured."—Mrs. R. GERBER, Los Angeles, Cal.

"Ayer's Sarsaparilla has a well-deserved reputation in this locality for restoring to healthy, vigorous action the vital organs of the body when they have become weakened or exhausted from any cause. I have used it in my family for this purpose, especially after the system had become depleted from malarial attacks. I have advised its use, and it has always proved invaluable."—C. C. HAMILTON, Emberson, Texas.

Ayer's Sarsaparilla

Prepared by Dr. J. C. Ayer & Co., Lowell, Mass. Sold by all Druggists.

Has Cured Others, Will Cure You.

"BALMY SLEEP"

Is impossible to anyone troubled with a cough, and health is impossible without sleep. As an anodyne expectorant for the cure of colds, coughs, croup, bronchitis, hoarseness, and all other throat and lung troubles, nothing in the range of pharmacy approaches Ayer's Cherry Pectoral. Every household should have it at hand in case of emergency. Rest, so essential to the consumptive patient, is secured by using this well-known preparation.

"For fifteen years I was afflicted with lung troubles. Ayer's Cherry Pectoral not only relieved the distress, but entirely cured me."—CARLOS M. FAX, Professor of Anatomy, Cleveland, Ohio.

Ayer's Cherry Pectoral

Prepared by Dr. J. C. Ayer & Co. Lowell, Mass. Sold by all Druggists.



NEW Japanese Buckwheat.

This new variety of Buckwheat, which was introduced into cultivation only three years ago, has proved of such sterling merit that, where known, it has almost entirely superseded all other varieties. The kernels are twice the size of any variety, the straw is heavier, it branches more and does not need to be sown so thickly as other kinds. It is enormously prolific. It ripens a week earlier than the Silver Hull and yields two or three times as much. Flour made from it is fully equal in quality to that of any other sort. Every one who grows Buckwheat should give the New Japanese a trial. Per pound, by mail, postage paid, 25 cents; three pounds 60 cents; peck 60 cents; bushel \$1.50.

**JAMES VICK, SEEDSMAN,
Rochester, N. Y.**

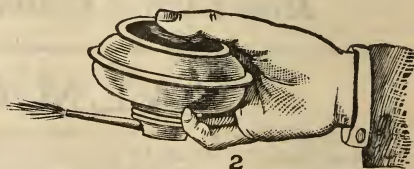
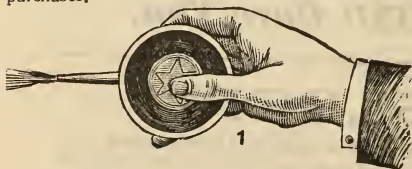
VICK'S EXCELSIOR INSECT EXTERMINATOR.

Will destroy Striped Fleas, Cabbage Lice, Green Cabbage Worms, Potato Bugs, Aphis, Squash Bugs, etc. Harmless to plants or vegetables. Sure death to all plant insects, particularly the green Cabbage Worm, for whose ravaging attacks there has hitherto been no known remedy. This powder can be applied most thoroughly, economically and quickly by means of the bellows we have had constructed for that purpose. The engraving represents the position in which the bellows is held when operating; also a well developed head of Cabbage on which the Exterminator was used the past season. The leaf in the background was taken from a neighbor's garden, where the plants, though well developed, were completely ruined by the Cabbage worm. About one-half or three-quarters of a pound of the powder should be placed in the bellows through the cork opening at the side. A single puff over the heart of the Cabbage is sufficient for one application. The bellows can thus be worked as fast as a person would ordinarily walk.

Exterminator 40 cents per pound, by mail. In lots of five pounds or over, 25 cents per pound by express at expense of purchaser. Eight-inch bellows, \$1.25; twelve-inch bellows, \$1.50.



The bellows can be sent only by express at expense of



For use in conservatories, and for house plants, we offer a small zinc bellows, as shown by the engravings. No. 1, with one ounce of Exterminator, price 25 cents, sent by mail. No. 2, with four ounces Exterminator, 60 cents, sent by mail. Try it. It will quickly pay for itself.

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SULPHO-TOBACCO SOAP, FOR FLOWERS and PLANTS.

WILL DESTROY

GREEN FLY, RED SPIDER AND MILDEW.

EASY TO USE. NO DAMAGE TO PLANTS OR PERSON.

Better than Smoking Tobacco Stems.

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HAIR ON THE FACE, NECK, ARMS OR ANY PART OF THE PERSON QUICKLY DISSOLVED AND REMOVED WITH THE NEW SOLUTION

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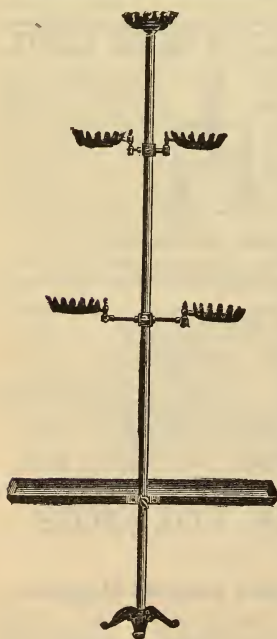
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Vol. 14.

No. 10

VICKS
Illustrated
Monthly
MAGAZINE.

OCTOBER, 1891

Published by JAMES VICK, SEEDSMAN, Rochester, N. Y.

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OCTOBER, 1891.

THE GREAT crop of fruit is the phenomenal horticultural feature of the present season. It is by far the largest ever known. For a few years past unfavorable conditions resulting from the weather and insect and fungous enemies had so restricted the production of many kinds of fruits that the future of the enterprise in many localities had begun to be viewed with alarm, and the very general inquiry was, How can we obtain crops of fruit? An overwhelming abundance this year now gives rise to the serious question, how we can obtain enough for the present crop to pay for raising and handling it. Many fruit growers will not be able to do so, and the year of abundance will to some prove ruinous. The perishable nature of fruits is one of the many attendant conditions of the business which are of great risk. Unless the fruit-grower has seasons when his profits are what might be considered good it would be impossible for him to carry on his work. Many orchards have been kept along for years at the expense of other portions of the farm, or of some business not related to it, with the hope that in time it would become a source of profit. Fruit raising in all its branches has been greatly extended, far more, apparently, than is warranted by its results. The small fruits, by reason of the short time required to produce them, are subject to periodical excesses;

a season of fair profits causes a large number of new growers to enter the field and an immense crop is put on the market, only to break it and spoil the profits of all concerned. Many then turn their attention to other crops, and the markets in time show a healthy demand. Thus the business oscillates giving alternately large and small crops. Peach-growing is another branch which particularly suffers from an occasional influx of more than usual new cultivators. If it were not for frosts and fungi and that special disease of the peach tree, the yellows, the production of this fruit would probably entirely cease to be remunerative. As it now is, peach-growing is greatly a matter of chance, and the hazard is so great that most fruit raisers dare engage in it only to a very limited extent. But the risks of the business make it fascinating, and now and then some daring and fortunate one realizes a competence from a few crops, and on the other hand others are financially ruined. This year the production of peaches is so abundant that only those who were able to market their crops very early have been greatly benefited, while many have incurred expenses which they have not been able to meet, and are thus in a condition worse than if their orchards had been barren. The crop of summer and fall apples has been large, and pears are very abundant. It is generally ex-

pected that the output of late apples will be less than the demand, as it is much less than the capacity of the orchards in

the principal apple regions, but it will probably be large enough for the interests of the growers.

FLOWER SHOWS AT TOKIO.

In the Imperial Japanese gardens of the Enriokevan, or the Akasaka Palace, occur two festivals regularly every year, of which the fall garden festival is especially worthy of mention.

The principal object of these fall garden festivals is, in the first instance, a flower show. The love of the Japanese for flowers and flower decorations is well known; in all classes of the population the desire to excel in plant and flower culture is plainly apparent. The poorest dwelling, whose occupant cannot afford

beautiful wistaria, which entices crowds to the pretty Temple garden at Kamedo, a place renowned for its fine plants of wistaria. Later come the blossoms of the tree pæonies, and in the fall, besides the wonderful red maple trees, the chrysanthemums, for which the Japanese have a great love, and which sets the whole of Tokio and vicinity in motion.

The large gardens in the Dango-Zaka quarter, in which the flowers are exhibited, are centers of attraction for the daily walks. But it is something extraordinary



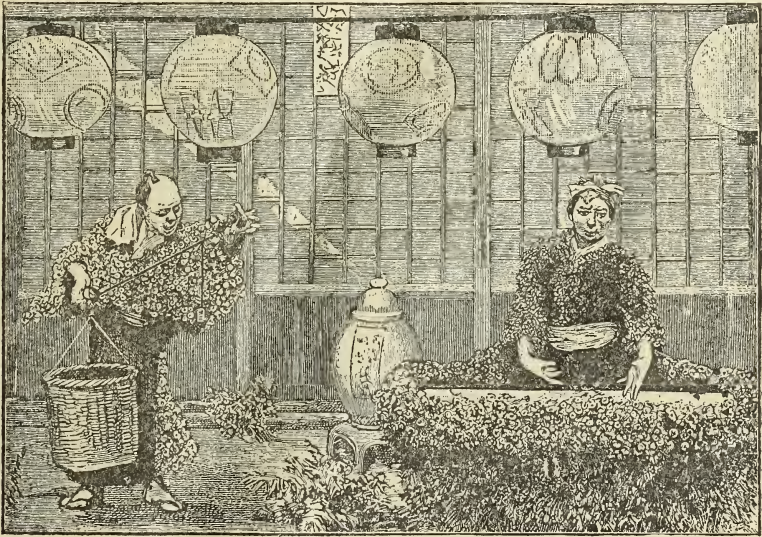
JAPANESE FLOWER FIGURES.

the luxury of a small garden, contains, as a room decoration, a single vase with some tastefully arranged flowers or shrubs, according to the season of the year. The blooming periods of the pet flowers of the people give occasion for many flower festivals, where the smoking, drinking and chattering throng feast their eyes on the floral display, while some of a poetical turn of mind write poetry on narrow strips of paper which are fastened to trees and shrubs. In the spring when plums and cherries are in bloom everybody goes to the Park of Ujeno and other places to admire the beauty of the blossoms. Then follows the bloom of the

which you may see here for a small fee. Not satisfied to admire flowers in their natural beauty, the refined Japanese taste has formed them into dramatic groups, persons and scenes which are very striking and natural. It is difficult, yes, almost impossible, to give the reader a good idea of these living flower pictures. We have in Europe flower beds of geometrical forms and some that represent animals; we have given hedges and trees the shape of animals and other objects, but that is child's play compared with the exhibitions of refined art, combined with artistic taste, which the flower exhibitions of the gardens of Dango-Zaka represent.

There are battle scenes at which the blood flows in streams and colors the snow red in a winter landscape. Horses and riders appear; ships with filled-out sails; heroes fighting monsters in dreary caves; here you see temples and palaces, high-arched bridges, and misty waterfalls. Of course these pieces are not wholly constructed from flowers, but flowers form the principal material. In representing the human figure, those parts which are usually exposed, such as face, arms, hands and feet, are made of a kind of papier-maché over a wooden foundation, and the faces are of such a wonderful life-like and expressive character that our wax figures can in no wise compare with them.

on it. And so wonderfully are the wide, spreading garments represented, and so naturally do they fit the oftentimes difficult positions of the figures, that the observer almost forgets that they consist of blooming, living flowers. Equally attractive is the reproduction of the many colored patterns of Japanese garments, with different colored flowers. Nature and art work together in producing pictures full of life and motion, full of natural vigor and artistic finish. Not everybody will be pleased with the everyday Japanese gardener's art; the artistically twisted and knotted trees leave the impression of nature crippled and therefore the appearance is not æsthetic; but no one who has



JAPANESE FLOWER FIGURES.

Swords and other apparatus, the wooden parts of houses, and the like, also the rocks, are mostly natural, but of course you will find ships and horses, bridge balustrades and temple doors, rocks and waterfalls which are made of flowers.

The most wonderful portions of the imitation figures of human beings are the garments they wear, for these are made of flowers, and flowers only. Over a frame of bamboo, which describes the shape of the garment, are the flowers—not cut flowers fastened loosely to the frame, but plants blooming in the open ground or in pots back of the frame; trained to the frame so that they will continue to bloom

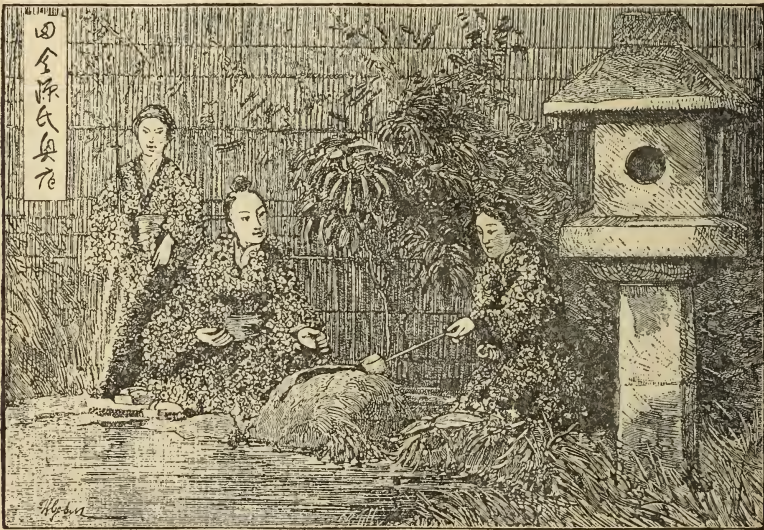
seen them will fail to acknowledge that the floral exhibitions are both beautiful and wonderful.

The garden festivals of the Emperor are in close connection with those of the people. They also are flower festivals, and invitations are extended for a flower show. In the spring there are the cherry blossoms, in the fall the chrysanthemums which you are invited to admire in the Imperial gardens. On these occasions the invitations are printed on heavy white paper with the imperial crest (a sixteen part chrysanthemum double rosette); in the spring they have the golden cherry blossoms and in the fall the golden Kiku

(chrysanthemum) flowers printed on the margin, which gives them a beautiful appearance.

The garden or park of the Akasaka Palace, in which the fall garden festival is held, is perhaps the only one of its kind. Along the walks of the park the procession of visitors in groups passes by lakes and rockeries, now disappearing behind a cluster of trees, and again appearing in the open, wending their way in a snake-like manner. The Japanese sun shines bright and warm upon this scene and brings out wonderful reflections from the autumn-colored foliage, the evergreen oaks, and the high, sombre cryptomerias, whose dark green forms a striking con-

is partly surrounded by long halls covered with straw mats in which the Kiku (chrysanthemums) are placed on exhibition. Visitors of course inspect them, as is their duty after being invited. These are truly imperial specimens which are placed on exhibition here, blossoms of all forms and colors. Some show up to 400 flowers on one stock, arranged in pretty regular circles, and all are nearly of the same size and in the same stage of opening. This is the art of the imperial gardener which one should and must admire. The garden festivals of the Japanese Emperor, which he gives twice a year, in the spring and fall, in honor of the foreign diplomats and, also, the higher Japanese officers, are



JAPANESE FLOWER FIGURES.

trast to the light red, shining foliage of the maples in the sun. One must see this beautiful Japanese autumn landscape, the blue sky, the pure, clear atmosphere in which everything shows off plainly against the sharp outlines of the blue background, the clear light and deep shadows and the incomparable color of the trees, to appreciate the melancholy mood into which sinks many a person who has visited Japan, when he thinks or speaks of the land of the rising sun.

Everywhere there is life and motion; everywhere you see groups gossiping together or strolling amongst the flower beds enjoying themselves. The plateau

regularly recurring events of the social life in the capitol of Japan, but which are always welcome and which nobody likes to miss.

The above account is taken from *Möller's Deutsche Gärtner Zeitung*. Who the writer is is not known, but the truthfulness of the whole description has been corroborated by Mr. S. YOSHIDA, Secretary of the Japanese Gardening Company in Tokio. The first illustration was prepared by the proprietors of the publication named above from a photograph sent to them from Yokohama, by one of their correspondents, and the others are from the French journal, *La Nature*.

APPLE ORCHARDS.

It is really pitiful to see the decay of old apple orchards through the country. Places where half a hundred trees dotted the acreage allotted to them, not so many years ago, can show today but a few decaying and forlorn looking specimens, such as are but a caricature upon the fame of their brethern who have already departed this life. We who are not so very old can remember the heaps upon heaps of perfect apples whose size and flavor there is (or seems to be) none like in the market of today. Now no fruit is in greater demand than the apple; nor is there a want so deeply felt as that for a plentiful and good supply of this most wholesome and delicious fruit. Even the young orchards—and they are not a few—make no advance upon the old and it is commonly believed that our day for a perfect and plentiful apple harvest is but a thing of the past. We used to think the same of the peach crop and after a time, and the decay of one set of trees after another without fruitage, we ceased to plant any at all, except a few old-fashioned people who persevered year after year. A few years ago, as all know, there was an unexpected perfect peach harvest, and the few believing mortals who had kept at it, planting young trees as the old decayed, reaped what they had sown. Everybody began at once to plant peach trees and have been repaid (especially this year) in a renewed crop. Now, I have heard it said, and am inclined to believe it too, that the time will come, sooner or later, when apple orchards will fruit out in the old way perfecting their fruit as of old without the aid of artificial means, and that our children's children probably will live to see the same—if the trees hold out. The beautiful fruit may yet lie in the old time plentiful golden and russet heaps under the wide-spreading branches of such trees as once were, when cider and apple butter making was the order of the day, and when everybody had enough and to spare.

As to the few trees left in old orchards I believe that they can still be preserved by judicious treatment and careful pruning. Too often a thick mat of tight old sod—as old perhaps as the son whose

hair is whitening under the roof-tree—has grown like a thick robe over and about the roots, obstructing light and air from them until each year lessens their chance of living and producing what they should. Certain old trees on our own premises by judicious digging about the roots, and a plentiful fertilizing of hard wood ashes and a good deal of manure, while the tops were subjected to a thorough pruning that all sick and decayed branches might be taken out have been saved. I think that many a fine old orchard might be limed and saved. We all remember, perhaps, the old story of the man, who dug his orchard over to find a pot of gold, and becoming disgusted and discouraged left the heaps of earth lying just as he had thrown them up for a certain length of time. I think, if I remember the story aright, that he was finally induced, with some trouble, to level the same. All hopes of the gold had departed and sinking back in his old time inanition he was surprised after some months to find his gold in the wonderful and plenteous crop that came to crown his labors. Well, it is only a story, but there is money in it for the man who will try to cultivate his orchard.

For some months after young orchards are planted the earth about the roots should be kept stirred, the oftener, the better; and, indeed, the sod should never be allowed to thicken about them. There are many discouragements for the apple grower of today, for the trees are liable to the ravages of insects of various kinds, and a battle is waged against these oftentimes with but indifferent results. Very often with the most complete spraying outfit and the judicious use of the same, the fruit turns out faulty and inferior. But without this artificial aid it seems well nigh impossible to secure, in our day, perfect fruit. We will hope that the future holds a better reward to the careful cultivator than this troublesome and disagreeable manner of saving our fruit from its enemy. In the old time when apples grew of themselves on almost any soil, without a tenth of the care and vigilance that must be devoted to their culture now, they commanded no price at all and we

were glad to give annually many bushels away to get rid of them. Now, however, the greatest skill is required to produce perfect and marketable fruit. Every large fruit-grower will know the value of even his waste apples when made into cider or vinegar. Used in this way the profit is more than the price of the fruit itself.

How well it will pay to expend one's time and attention on an orchard in bearing condition is well worth the trial. I believe that all expense attending the yearly digging, fertilizing and pruning will be amply repaid by the added profits. As to the insect pest victory can be gained only at the price of eternal vigilance. H. K.

MONOTROPAS.

"Death in the wood!
Death and a scene of decay.
Death and a horror that creeps with the blood,
And stiffens the limbs to clay.
For the rains are heavy and slow
The leaves are shrunken and wan,
The winds are sobbing weary and low
And the life of the year is gone."

So wrote ELAINE GOODALE of our Indian Pipe, *Monotropa uniflora*, but at the risk of proving myself wholly devoid of poetic sensibility I must say it seems not at all so to me. Here is a little open place in the forest lit up by the last of the daylight, standing in the gloom under the thicker boughs I see clumps of *Monotropa* shining from afar in their first freshness and not yet in bloom, some stems merely showing their arching backs, the flower buds still beneath the ground. Coming nearer I count twenty-five stalks within a square foot. Single roots have as many sometimes, but there are several here. Ferns are growing close beside them; it is life in the wood instead of death, and life more strange and mysterious than is ordinary. Life is ever a mystery in the last analysis, but a strong perennial spreading a multitude of roots in search of its food has an obvious basis—we see a sufficient cause for the effect—but the Indian Pipe's root is a formless mass of brittle, thread-like bodies scarcely one-sixteenth of an inch long confusedly cohering and lying like a stone in the soil. We are told the pipe is a parasite on tree roots but I cannot be sure it is true. Have not the botanists jumped to that conclusion as an easy way to account for its peculiar ways? This clump I have just dug up grew in the soft mold of a rotten log with no roots in contact that I can see. Another root-mass had molded itself upon a small root of beech and I thought I had found it in the act until I saw the beech root was dead and decay-

ing, the pipe was not yet in flower and how could a dead root perfect its blossoms and seeds? However it may be, the root-mass is of small account beside the flowering stems, as far as size is concerned. This plant has seven stalks, any one heavier than the whole root; it recalls the difference between the mushroom and its obscure and small mycelium. Another fungus-like habit is the wide variation in numbers of pipes between one summer and another; one season the woods are full of them, the next perhaps hardly one can be found; some unknown quantities of heat and moisture must combine to bring them forth. If supported by tree roots one would expect them to be less sensitive. No one not accustomed to using a botanist's eye would be likely to see that the *Monotropa* is closely allied to the wintergreen, the *Pyrolas* and prince's pine (*Chimaphila umbellata*), but so it is; indeed, some authors include the *Monotropæ* in the *Erica* family (*Ericaceæ*) as a separate tribe, however. Here, August 3d, are clumps that flowered a month ago, their pure white leaves are now black and rotten, the 'single-flowered stalk, which drooped heavily while in bloom, has now become erect, bearing the seed vessel, round, and rapidly enlarging on its summit; these brown stalks will stand here all next winter, scattering their seeds over the snow, perhaps, but close beside them are other colonies just coming up, with no intermediate ages, one more strange circumstance where there are so many already.

The *Monotropæ* comprise ten species, the blood red snow plant, *Sarcodes sanguinea*, of California, is one of them. Many readers will remember a colored plate of this plant in the *MAGAZINE* some years ago. Growing along with the pipes,

though much rarer, is another, the Pine Sap, *Hypopitys lanuginosa*. Instead of the pure white of the Indian Pipe its stem and flower are yellow, becoming red when old, and there is a long spike of flowers the same or nearly like those of the pipe, except that they are much smaller. The root is scarcely more than a mass of yellow mildew penetrating the wood mold, a color almost without substance. The brown, leafless beech drop, *Epiphegus*, has the same amorphous root-mass as the *Monotropæ*, and the naked coral root of

the *Orchis* family certainly approximates it. Here we have the same structure in three widely different natural orders accompanying a colorless or leafless habit. Is this anything more than accidental? The Pine Saps smell like musk, they say, our species has the odor of bumble bees. The *Monotropæ* is scentless and this somehow enhances its strangeness. It is a being intent on its own thoughts, having nothing for us, self contained and silent, visited by no insect, secretive, and full of mystery.

E. S. GILBERT.

CULTURE OF THE CALLA.

As the question in regard to the successful culture of the calla is often repeated, and as I always succeed with it, my experience may help others. It is a knack, but a knack born of love that enables one to succeed with anything.

I use a jar holding one gallon, such as grocers pack butter in. The first two inches in depth consists of lumps of charcoal; and then two inches of rich soil, and, lastly, an inch or so of leaf-mold is added. Take a plant, like that commonly sold in the trade, and place it in the center of the crock and add another inch or two of soil like the last; water enough to saturate but not flood, then set in the shade (in the house) a few days. As soon as growth starts place the jar in a sunny window below the sill at least far enough to prevent fierce sun heat against the lower half of the jar. Turn it about a little, daily, to keep the plant upright, and keep watered to the top of soil all the time.

Warm water is good but better no warmer than your hand can bear than hot, as some recommend; but a "foot-bath" of quite warm, not *hot*, water every few days is beneficial, given by placing the jar in a pail and filling to cover the outside of jar to the brim. Let it stand for half an hour that the leaves may be well steamed. The leaves should be kept clean.

If a flower appear during this summer be glad, but do not change the treatment excepting, to preserve the flower, move the plant from the sun part of the time. When the flower is done cut the stem away a few inches at a time as it shrivels.

The plant divides every time of flowering, but as the root does not separate it is not weakened. Continue the above treatment up to the first of September.

By the first of August the plant should be quite stately. If the soil has been kept *wet*, plenty of sunshine and air given, and the roots not injured by heat, the leaves are large, dark and glossy; but you want flowers every six weeks from this time till next May, therefore you must feed up your stock.

Take the plant out of doors, fill the jar with water, and with a stick disturb the "mud" all around the sides, being careful not to break the roots much, then turn it down upon the side and dash water into the jar repeatedly to remove the soil to make room for new, which should be like the first, only richer with old rotten stable yard dirt. Put in a little, then water, and so continue till the jar is nearly full. Before filling, however, take a knife and slip off a few of the little knob-like grains of corn growing on the stem root of the plant. Take three or four of the larger ones and put them in an ordinary four-inch pot with drained, common soil placing them just below the surface; water and keep moist and shaded for a week or two and then put the pot in the cellar.

Now your calla is prepared to occupy a two-foot space in an east window, and as close to the glass as may be. If in a south window it may stand back eight inches to allow pots of low growing plants next the glass, and in either the winter sun will not hurt the roots. Be sure not to shade above the plant or it will be weak. Run

the window shade up to within six inches of the top. When flowers open they will remain much longer if given a light, cool situation during the middle of the day. I have a window fronting north where there is a constant display of plants that have been brought up in sunshine.

There should be flowers in quick succession all winter. Some cold night a piercing wind will curl up their beautiful leaves and blight the finest bud and throw ashes over your pride. Most assuredly everyone has this experience once in caring for callas in rooms without furnace

heat, and with such heat much care is needed to steam the leaves or keep the atmosphere of the room moist enough for comfort to humanity, which suits most kinds of plants. But if frost comes do not be disheartened. Simply cut away the "lop-ears" and set the plant in shade with light and warmth of the room for some days, then give a root bath and bring to the sun again with the same treatment as before with added protection. The plant when grown indoors is very sensitive to cold though the root will endure all but actual freezing.

R. A. H., *Illinois*.

RHUBARB.

Rhubarb is found in nearly every farmer's garden, but very few grow this vegetable to perfection, and yet it is one of the easiest to produce. And if one is living in the vicinity of a city or large village, by taking a little pains to force to early growth, the cultivation of rhubarb can be made quite profitable. The plant is hardy, and it responds readily to high cultivation; and added to these qualifications is its ready response to forcing, when the conditions are provided, thereby bringing it forward for market or home use before any other vegetable can be grown; its qualities, altogether, make it an acquisition to any garden.

The small roots of rhubarb set in the prepared bed in May or June, will be in condition to force next spring and will last for about six years. The late, large stalks which will be produced the fall after planting may be sparingly plucked for use or for canning. I am aware this latter advice is not according to "regulation" usages, but experience confirms the truth of the statement.

Rhubarb does best in a moist soil, but good yield can be grown on most any kind of soil except that which is very wet. The main thing in the culture of this vegetable is manure. The richer the land the larger the crop and better the quality. For garden culture I would, in addition to the ordinary dressing and cultivation of the soil, adopt the following method: Lay out the rows east and west as long as desired. If considerable ground is de-

sired to be occupied, make the rows in pairs, three feet apart with a space of four feet between each set. This will allow a space of one foot between the frames if glass is used for forcing in spring, and admit of two rows within each frame. Close planting will do where the beds are renewed often.

Having laid out the rows, spade a trench one spade deep and two spades wide, or about one foot in depth by about twenty inches in width. Throw the soil to one side, and when the trenches are completed, place in the trenches four inches of dressing, if not fully decomposed, no matter. Step into the trench and put the spade down another length and mix the manure and soil thoroughly. Now add four inches more in depth of manure, shovel back the soil previously thrown out, mixing the dressing with it. Our rows now are raised four or five inches higher than the main level.

There are three ways of procuring plants—by digging up old hills and dividing the crowns; by sending to the nurserymen for plants, and by sowing the seed and growing your plants. The first named method is the easiest and cheapest and will give good plants, provided the variety is what you want. Last year a single hill some fifteen inches in diameter after it was cut around and pried out of the grass ground furnished me twenty-five good crowns.

Set the plants two feet apart in the rows, and the rows being three feet apart,

will give eight plants or hills to each two sash when we come to cover in spring. During the summer keep the weeds thoroughly down, and by August, if your rhubarb is the larger kind, the growth will be almost marvelous.

In the fall make the frames for holding the sash, if it is desired to force a part of the plants in spring. On the plan we have made thus far the sash should be 3 x 6 feet. The frame should be made of one and a half inch plank, about three feet high in the back and fifteen inches in front. Place the frame one foot from the outside hills at the end and eighteen inches from the plants on the sides. With rows of parallel frames, following the distance given before, there will be a walk of a foot between them. If but a few sash can be

afforded, each two will cover eight plants, and four, sixteen, and so on, which will give an ample supply for a family. After the season for forcing is past the sash can be used for cold frames to protect cucumbers, tomatoes, etc., previously started in the house or hot-bed. Annual dressing should be given each fall forking it in lightly in spring. Rhubarb is easily forced in winter by placing strong plants in boxes or barrels and filling in requisite soil and placing in a warm cellar or near a furnace where the temperature will be kept to 60° to 75°. No matter if light is excluded, it will grow and the stems will be crisp and tender. The Victoria is the largest kind, but the Linnæus is earlier and of superior flavor.

L. F. ABBOTT, *Lewiston, Maine.*

HANGING BASKETS.

The subject of flowers is never hackneyed; there is always something to say about these lovely products of nature—some fresh beauty to describe, some new variety to chronicle, or some original way of combining or arranging old varieties.

Anyone, no matter how narrow the plot of ground, or how limited the purse, can have a few flowers. If there is lack of space for their cultivation hanging baskets will do much towards beautifying the home. There are so many pretty devices for these baskets that one hardly knows which to recommend. And while they may be bought of any shape and material, and at all prices, it is possible to make exceedingly ornamental ones at home. An ox muzzle of wire, which may be purchased for a few cents, if painted olive and lined with moss is one of the best designs. First, securely place a layer of soft moss inside of the wires, lapping the pieces well, so that no dirt will escape; then fill with suitable soil, the pressure of the soil causing the moss to completely conceal the wires. The basket can be suspended by wire or chains—the twisted silver wire used for hanging picture frames is strong and durable, as well as inexpensive. If a root of maurandya vine or thunbergia is planted by each of the three wires by which the basket is hung, they will climb rapidly and give

it the appearance of being suspended by vines. Put anything suitable in the center, and around the edges roots of Saxifraga Fortunei tricolor; make holes through the moss into the soil at the sides of the basket and put in little bits of the saxifrage. Keep the basket well watered and it will become a beautiful sight. Of course it is not suitable to hang over a carpet, but in a conservatory, or on a piazza in summer it is admirable. Common, wooden, chopping-bowls with bits of rustic work nailed on, can be made quite as pretty as those bought at the florists'. After the bits of roots or irregular branches are fastened on, stain with mahogany stain and varnish, and they do not look at all "home made." Put a saucer in the bottom and pieces of charcoal in it for drainage, fill the bowl with good, rich soil and plant variegated Ivy geranium near the edge, and perhaps a small and stocky scarlet geranium in the middle and some delicate vine to climb the chains, and you will be amply repaid for your trouble.

One of the prettiest baskets I ever saw was a small bowl thickly covered with branches of tamarack which were entirely overgrown with grayish white lichens and some parasitic growth; the whole looked like a curiously contrived bird's nest of lichens. Oxalis floribunda rosea was planted in it and grew luxuriantly, and

its multitude of bright blossoms and the monotone of the basket made a harmony in pink and gray which was admired by all.

Among the plants best adapted to ordinary hanging pots, are the sedums, *S. Sieboldii* being one of the best. The Kenilworth ivy and the othonna are almost as good, and the *tropæolum* is a favorite with many. A basket with climb-

ing asparagus in the center, and pink oxalis as a finish for the edge is very airy and graceful in effect. But a basket containing asparagus must be kept well watered or it will not thrive; in fact, an abundance of water bestowed regularly, with of course good drainage, is the great secret of the thrifty hanging basket.

ADA MARIE PECK.

THE GOLDEN SYRINGA.

The golden-leaved syringa, *Philadelphus coronarius folius aureus*, is a very meritorious and useful, hardy, deciduous shrub. It may be described as being a golden-leaved form of the common syringa and is a shrub of vigorous growth and compact habit, becoming from four to six feet in height, having opposite, golden yellow leaves which retain their color well throughout the summer. The flowers, which are large and of a creamy white color, are produced in the greatest profusion, and in dense clusters, during the months of June and July, the precise time depending in a great manner on the soil and situation in which the plants are grown. To grow the *Philadelphus* to perfection it should be given a deep, moderately enriched soil, and small weeds or grass should not be permitted to grow around the roots. Large and well established specimens should be given a good top dressing of well decayed manure every two or three years and this is best ap-

plied during the late fall or early winter months.

The tendency of the *Philadelphus* is to make long, rambling shoots, so pruning must be resorted to, in order to preserve a natural grace; and as the *Philadelphus* blooms on the wood of the preceding years' growth, the pruning should not be done in winter or spring; but as soon as blooming ceases the old wood should be shortened back, in order to promote the growth of the new for another season. It is well to cut out the old wood occasionally, and remove all root sprouts as soon as they appear.

Propagation is effected by cuttings, and also by a careful division of the older plants, but as strong, well rooted and nicely shaped specimens can be so readily and cheaply obtained from nurserymen, those who desire only a few plants will find it more satisfactory to purchase, rather than to attempt their propagation. CHAS. E. PARNELL, *Floral Park, N. Y.*

SOME RUSTIC ARRANGEMENTS.

How much of interest and affection may center round the little spot one calls home is determined not so much by the monetary outlay, as by the thought and real love work put into it. This is especially true of our home grounds; and as "the worth of the nation in the long run is the worth of the individuals composing it," and the love of home one of the strongest incentives to good citizenship—it is surely worth our while to make the home spot as attractive as possible.

Who does not cherish with a curiously tender affection some gnarled old apple tree or rustic bridge, some climbing

sweet briar or tiny garden, which were well loved and fondly remembered features of his youthful environment? So, with Dame Nature on hand to superintend and supplement your endeavors, "the simple means at hand employ" and who shall foretell the wonders to be wrought?

The particular and very pretty lawn vase of which I would tell you, as an encouragement to "undertakings" of this sort, did not materialize until the 24th of June, some years ago. Too late in the season one might think to give very large returns of beauty; but—we shall see.

Its foundation was a barrel sawn in half covered with rough bark and mounted upon a rustic tripod. The vase was filled, the first third with well rotted stuff from the cow-lot, the rest from an old chip pile with a small admixture of sand. An old hoop from the barrel supplied a high arching handle. In the vase were planted, for the center, a *dracæna*; at each end of the handle a *maurandya* vine; around the edge some *Madeira* bulbs, and for the rest were white *alyssum* and glowing scarlet *verbenas*.

Rainy indeed was the evening when that vase did not get a full pail of water for its refreshment; and very soon it began to pay for the care given it. The *Madeira* arranged itself in graceful festoons all about the vase, and upon the south side fell in glorious masses of shining green to the ground.

The *maurandya* took the handle of the basket as its especial exploiting place; and if you would know how completely charming this slender vine can be, you should see it grown in a similar way. All summer it was a delight to watch it, as it frolicked in and out in dainty grace, its wealth of delicate bloom, mauve, blue, white and lavender, adding not a little to its indescribable beauty.

The *verbenas* grew apace, and by being promptly pinched in soon spread a mass of glowing blossoms to the sun. The sweet *alyssum* filled every chink, not otherwise occupied, with its fragrant, fairy-like flowers, while the *dracæna* flung its slender leaves of green, like a living emerald fountain, over all.

For four months that plebeian lawn vase drew the admiration to itself which several aristocratic iron affairs in the neighborhood had been set to win; and was a source of genuine delight to the owner.

Encouraged by this success the next attempt was a rustic arbor. At the side of ample grounds grew a wild young blade of an apple tree. How it came there nobody knew; why it had been allowed to cumber the ground they could as little conjecture; for it was a seedling—worthless but head-strong; like many a human tree who is in a "state of nature rather than of grace." To be sure it had met with the vicissitudes common to a grace-

less state, and had been broken down, only to send up, instead of one strong shoot, four; which grew with a rampancy usually denied to better things, at obtuse angles from one root only to intertwine their thrifty branches like a leafy tent overhead.

A circular seat was fitted between these trunks resting upon strong supports supplied beneath; and grape vines were interlaced around and about to form a back to the seat. Now a *Virgin's bower* *clematis* was planted beside it and carefully tended, but not trained. That was left to nature and she did it with a deftness not to be exceeded by any adept at the art. Nothing could excel the bewitching grace with which that worthless apple tree was bedecked. It was one white drift of bloom and beauty where the birds and bees held high carnival and from which fringes of trailing vine and plummy blossoms fell to the ground, on every side, like embroidered curtains to a verdant tent.

It was just the cozy spot to which to retire with a favorite book—for a quiet bit of study—or to "have it out" with one's self when things had gone wrong. The most perturbed spirit soon caught the reflection of the heavenly peace and quiet which usually reigned there; or if the rollicking birds denied this, the harmony of their happy songs was soon echoed by the human heart below; and tradition hath it that more than one uneasy mortal on the "anxious seat" had been sent away with a happy affirmative to his all-important question from this sylvan retreat. Be that as it may, it was a favorite resort for old and young; and many a heartache has been charmed away by the quiet beauty of that still place.

This arbor faced a curved path which led from the highway to the house; and being on high ground commanded quite a view, which, while not entirely pleasing, had its attractive features; these the owner proposed to enhance, and this is how he set about it.

Across the path from the arbor the pine trees swept away in a wide circle, leaving an outlook broken only by two wild cherry trees, which had held their place upon the lawn rather by suffrance than desire. These were some distance from the arbor and a little down the slope. Some

branches of the smaller tree were cut partly off, in such a way as to lodge upon the larger, one above the other, until the whole expanse was pretty well latticed over, except that one space was left—like a high and wide gothic window—in the center. The whole framework was then treated with a Japanese hop and a climbing single rose. The effect was the prettiest screen imaginable; and from the arbor easily appeared through the gothic window a charming bit of rural landscape—a vista of golden sloping grain fields and verdant meadows; a winding road and a rustic light-spanned bridge—a glint of shining water and dusky depths of shadow cast by the giant willows on its bank; road and brook winding on, one

up the hill, the other down the valley; but both lost at last in a dim old forest.

This was the picture; and a dream of beauty it seems to me now, as far away from it I remember some delicious hours in the arbor with the sighing of the pine trees and the murmur of the brook sounding melodiously in my ears, like a running accompaniment to the mad, merry music of the thrushes which sang overhead.

Ah, well! those were happy days and dear delights—and such as these it is that make a home. By ways of winning nature to work with us and for us—rather than by great expenditure and elaborate arrangement, home comes to be what home should always be, “the dearest spot on earth.”

DART FAIRTHORNE.

OUR NATIVE CYPRIPEDIUMS.

Flowers, like persons, have distinctive characters of their own. It is not in idle figures of speech that we speak of the “stately lily,” the “modest violet,” or the “flaunting sunflower,” for all know that these qualities are inseparably connected with them. Like humanity again, not only does each flower possess an individuality of its own, but the different families, or genera, to which they belong are also divided into classes of varying rank or social order. The pigweed is as surely plebeian as the rose is regal. We have our work-a-day flowers, that are our standbys through storm and sunshine, making the whole season glad with their bloom; and we have our rarer flowers, fastidious of treatment it may be, brief of bloom perhaps, yet so grand in leaf or bloom, as to be truly royal when at their best.

One of these confessedly royal orders, is the orchid family, now so highly esteemed and much desired, that many wealthy people are building special houses for their accommodation. The tropical orchids, in spite of their great beauty, must ever remain the treasures of the favored few only. Their high price, and exacting requirements of humidity and warmth, unfit them alike for the poor man's purse and the housewife's window. Fortunately there are several species native to our own land, which are less exacting in their requirements, but while

orchid enthusiasts have striven each to out-do the rest in making collections of the tropical species, our native sorts have been shamefully neglected. This is the more inexcusable because some of them, at least, are well known for their beauty, and all are perfectly hardy.

Our finest native orchid is undoubtedly the *Cypripedium*, or lady slipper, of which there are several species, some of which are found in nearly all the States, though quite rare in some places. The best known and most widely distributed species are *candidum*, *parviflorum*, *pubescens*, and *spectabile*. Of these, the *candidum* has the dwarfiest growth, and the smallest flower, the tiny white “slippers” being less than an inch in length. Its geographical range is wide, but it seems to prefer the colder parts of the country. I have seen the edges of timber land in Western Minnesota, that were completely fringed with the dainty *candidum* blooms, while seven hundred miles directly south only a few scattered specimens could be found.

The blossoms of *C. parviflorum* are a trifle larger than those of *candidum*, and are of a clear yellow. It is scarcely worth naturalizing where the larger and finer *pubescens* can be found. *C. pubescens* deserves more favor than it has received. It is not so particular as the rest of the *Cypripediums* as to soil and location, blooming equally well in the woodland,

or on the prairie, and its deep yellow slippers slightly shaded and marked with bronze, are nearly or quite the size of *C. spectabile*. Certainly no collection is complete without it.

But the acknowledged queen of the *Cypripediums* is the *spectabile*. Never a common flower, it is yet well known, for no one who has once seen it will ever forget it, with its oddly inflated, but most lovely blossoms, of an ivory whiteness, touched here and there with spots and pencilings of a clear purplish pink. No other flower is like it, and a single specimen will attract the attention of the most indifferent. However, nature, with her true erratic turn, while lavishing gifts with the one hand withholds them with the other, and this spoiled woodland beauty, that we would so gladly transplant to our own gardens, cannot live and thrive unless every wish and need of its nature is provided for, and sometimes that is not easy to do.

Like most wild flowers, it is rarely noticed until it is nearly or quite in bloom. Its curious, cord-like roots that spread out in every direction from the crown, like so many tarantula legs, lie close to the surface of the ground, and as it generally grows in loose or gravelly soil, it is not a hard matter to take up the plant without breaking or in any way injuring the roots. So moved and kept damp, it can be transplanted without the slightest injury, even if in full bloom; but the after-living is quite a different matter.

I have experimented with dozens of

plants, and often after I had flattered myself that all danger was past, I have been dismayed by observing a tiny black spot on one or more of the stems, followed by a forlorn drooping of the whole plant, and a gradual decay of the same. Rarely indeed does a plant thus affected ever appear above ground again. If one of these diseased plants is dug up the whole or greater part of the roots will be found to be half rotten and of a dirty-dark color, instead of their natural pale hue, showing conclusively that the trouble first existed in the roots themselves. This root blight, if so I may call it, mostly affects specimens planted on level ground, or in soil that has a tendency to pack; which would seem to show that while this *Cypripedium* is fond of water, it is impatient of imperfect drainage.

Full exposure to the sun seems to be another thing that is almost fatal to the plant. It seems to like best a situation at the foot or side of a wooded hill-slope, preferably a north one. So situated, success is almost assured, and if given abundance of water, a rank, luxurious growth is induced that is something remarkable. Once, at the edge of a shaded lake, I saw a bed of fifty or more clumps of this *Cypripedium*, in full bloom, and a finer sight I never expect. If those in charge of parks or fine private grounds, where suitable location could easily be found, were once aware of the great beauty of this fine plant when grown in masses I am certain more use would be made of it.

L. S. LA MANCE.

BEE BLOSSOMS.

The honey bee's fondness for clover is proverbial, and in the season for clover blossoms hives are richly stored with honey. If there is any plant which contains honey in its bloom you may be sure the bee will find it. During warm winter days I have had them buzzing all about door or ventilators of my little greenhouse. They rarely light upon poisonous plants, unless half starved, but I have heard of severe cases of poisoning from eating honey while laurel and hemlock were in bloom.

Buckwheat is a crop largely sowed by

bee keepers, and probably is a richer source of honey than almost any other plant, but buckwheat honey for me always has a "tang" by which I can readily distinguish it. The honey stored from oak blooms in the spring has a peculiar bitterness like that of hoarhound candy. The small, sweet, white flowers of the holly and persimmon trees are boons to bees and while yet quite a distance from such trees when in bloom, the bee's loud buzzing in swarms through the branches is not altogether agreeable.

But the finest honey of all is the famous

"sour-wood honey," taken from the hives in autumn. If the old dark comb has been taken out in early spring and boxes put in the hives, the new comb, made during spring and summer, is white and thin as paper, and the honey made from "sour-wood" bloom is sweet, pure, delicately flavored, limpid, and almost as colorless as water. This is taken out and carefully stored for winter use by housewives, or is sold for ten and fifteen cents per pound. It sells much better in the white flakes of comb, and the boxes—with glass upon one side—hold it firmly and securely, a box usually selling for one dollar.

This tree, *Oxydendrum arboreum* or *Andromeda arborea* of LINNÆUS, is quite handsome for ornamental planting, and I know of nothing prettier, or more convenient for the bees, than a row of these planted on the southern exposure of an

apiary, with a white or cool-colored beehive under each one. The tree grows from fifteen to forty feet in height, with moderately spreading, graceful branches. The leaves very much resemble those of the peach, but are somewhat broader and blunter. In autumn—very early—they change to bright shades of scarlet and crimson, and the long, one-sided, clustered racemes of white flowers, shaped like lilies of the valley, give a wonderfully pretty effect against this bright aureole of color. The flowers begin to bloom a month earlier, but open slowly, and are retained a long while. They are drooping and graceful in outline. The leaves are deciduous, the young shoots, a bright crimson in winter, and the tree is hardy as far north as Pennsylvania. Beekeepers in mild climates will find it a very desirable tree.

L. G.

UNDER THE OCTOBER MAPLES.

What mean these banners spread,
These paths with royal red
So gaily carpeted?
Comes there a prince today?
Such footing were too fine
For feet less argentine
Than Dian's own or thine,
Queen whom my tides obey.
Surely for thee are meant
These hues so orient
That with a sultan's tent
Each tree invites the sun;

Our Earth such homage pays,
So decks her dusty ways,
And keeps such holidays,
For one, and only one.

My brain shapes form and face,
Throbs with the rhythmic grace
And cadence of her pace
To all fine instincts true;
Her footsteps, as they pass,
Than moonbeams over grass
Fall lighter, — and, alas,
More insubstantial too!

JAMES RUSSELL LOWELL.



FOREIGN NOTES.

THE FLOWER MARKETS OF PARIS.

These markets are in all their beauty during the fine spring days, before Paris becomes empty, and the amateurs, then numerous and eager, are rather puzzled as to a selection between the bulbous plants, spring roses, *Deutzia gracilis*, favorite ornament of the *mois de Marie*, the first carnations, Chinese primulas, and the cinerarias; the innumerable stocks, *Myosotis alpestris*, the Indian azaleas; the spiræas, gardenias, pinks, and a hundred other plants. At the same time armfuls of lilac flowers, mignonette, and *Narcissus poeticus* attract notice by their perfume and the small hampers (*bou- rriches*) of pansies, double daisies, anemones, and ranunculus are prepared for the city gardens and window cases.

In the height of the summer season asters take the lead with carnations of every shade; the gladiolus embracing such a variation of coloring; the agapanthus, *Gaura Lindheimeri*, similar to white butterflies; the dark brown leaved *Perilla nankinensis*, *Lilium speciosum*, with their white and red varieties; the golden Japanese lilies, the tuberose, not less fragrant; *Plumbago capensis*, rhodanthes, vincas, the gypsophila and stevia, which combine so gracefully with other flowers and give such a lightness to bouquets. Then in the small hampers we find mimulus, verbenas, balsams, ageratum, lobelias, and nemophilas; all annual, charming, open ground flowers.

The autumn is devoted to the chrysanthemums. Either grown in pots, or offered in clumps or as cut blooms, they come everywhere to the front, and nobody thinks of complaining, so beautiful and pleasingly varied are they. From the small flowered Pompons or Liliputians to the large Japanese they provide a grand display of varied forms. They adapt themselves to every use and present a great range of the freshest colors. They are dwarf or tall, slender or bushy, from twelve inches to six feet high. They may be grouped in mixed borders, in flower

beds, or planted in masses or singly, and lend themselves to every combination with the great merit of lasting very long. No wonder the chrysanthemum is the queen of the autumn. Some asters may, however, still be seen, charming miniature plants; then some laurustinus, Christmas roses, soon followed by cyclamens, which commences the series of the winter flowering greenhouse plants. Towards Christmas appear the foliage and winter berries, the bronzed mahonia, the red-berried holly, the spring *Ruscus aculeatus*, clusters of mistletoe, sprays of Japanese *Euonymus*, and of *Schinus Molle* with their bunches of rosy seeds. The sharpest cold does not deter the vendors in the open air markets, for we may see some closing their shops with thick cloth, and by means of a stove maintain a sufficient temperature to preserve the flowers and plants from injury.—*Jour. of Horticulture.*

ROSES AND GLADIOLI.

By planting large beds with dwarf roses, intermixed with such bright kinds of gladioli as *G. brechleyensis* a magnificent effect may be produced, as they blend well with roses, and the two together make a grand show. Almost all the Tea roses look remarkably well in the same way, and gladioli never appear so much at home anywhere else as when so planted, there being a lankiness or nakedness about the lower part which the roses hide and help by their foliage. Another great advantage in having the two together is that when the roses become thin of bloom the gladioli take their place in making a gay bed or border, as the case may be.—*S., in The Garden.*

NOTES ON HARDY PLANTS.

Three grand flowers for a blended group are *Delphinium belladonna*, *Campanula persicifolia*, the new large white having the additional name *grandiflora alba*, and *Mimulus cupreus*, the true high colored and free-blooming kind, to form a carpet or broad edging. It is not, how-

ever, until the second year after planting that the individuals flower in the profuse way to form the picture I have in mind, and such as I should wish the reader to realize. It will be noticed that two are rather tall plants and one very dwarf, but do not mind that, for either for a close or somewhat distant view they are capable of making a vivid and rich display. All flower at a corresponding period, do well in the same kind of soil, and enjoy full sunshine, and all last a long time in bloom. It is largely due to this uniformity of habit that they may be pointed out as a useful set to get a given effect. Still, as is well known, they are separately fine, showy things. The *minulus*, as the outsider, should be in broad patches; it gets six inches high; flowers are intense self orange-scarlet, back surface self copper color. Do not be surprised if the first flowers, or those after new plantings, come a pale, poor yellow. As the plants get established the flowers become more deeply colored, and continue so until the roots are disturbed again. Speaking of the two taller plants, the *delphinium* is well known for its unique masses of turquoise-blue spikes, not too stiffly formed. The *campanula* is less known, as, in fact, it may be termed a new plant, but it is capable of rapid propagation. The white flowers are bigger than the biggest *Canterbury Bells*, even the "improved" sorts. Of course, the white should predominate in the group, or form the setting for a pale blue, and the latter would be better in effect if not placed formally, as at regular distances or exactly in the middle. A variation of this group can be had by substituting for the turquoise-blue the deep gentian-blue of the old double *Siberian larkspur*. It may be scarce and dear, but if a strong specimen, just one would do in the mass of white; its dwarf habit and shining black stems would give it a fitness for this purpose possessed by no other *delphinium* I know, and the effect would be new and matchless. I get this idea from a fact and not imagination, for accidentally these plants exist *in situ* as mentioned, only not in the masses as advised.

Silene quadrifida. After studying this little beauty in growth and flower it inspires one to sound a note of praise. I shall be very much mistaken if this is not

a good deal looked after when it becomes better known. It grows in dense tufts of minute foliage, and in spring it is bespangled with pure white, starry or notched flowers. These continue in succession for months, the plant the while getting taller until at last it may reach eight inches. A true perennial, doing well in sandy loam with lime nodules.—*The Garden*.

THE JAPANESE MELON.

Under this title an article is contributed by E. A. CARRIÈRE to the *Revue Horticole*. It appears that this variety was procured from Japan by M. CAYEUX, together with the seeds of other plants ordered from one of the Japanese visitors, or exhibitors, at the Paris Exposition of 1889. The writer says that it is probably the smallest and perhaps, also, the earliest of the edible melons.

Without giving entire the elaborate description of the plant in all parts, the main points are here noticed: Fruits about two and three quarter inches by four inches in the two diameters—7 x 10 centimètres—abruptly rounded; color, a deep green passing to yellow in ripening, at which time it exhales an odor of great delicacy, but somewhat unusual; skin very fine, lightly wrinkled or roughened with elongated grayish spots which seem to show a tendency to form a network, and through which run, lengthwise of the fruit, some wide lines, deep but not creased, almost black, simulating ribs which, however, do not exist. Flesh green, sometimes whitish green, not of great thickness, slightly sugary, melting, juicy, of a very fine and peculiar, but agreeable, flavor, recalling a little that of orange flowers.

In ripening the yellow tint of the skin increases and the flavor of the flesh becomes higher without, nevertheless, taking the characteristic odor of our melons, and particularly that of the *Cantalopes*.

The Japanese melon, besides its great earliness is especially remarkable for its great and long-continued productiveness, results attendant upon its prolonged season of growth. In fact, after each pinching, or shortening in of the shoots, a new branchlet is made which gives a fruit; in this way its growth being, as may be said, incessant, it is only to make successive or

continuous pinchings to induce the formation of new fruits. In a word, and notwithstanding the smallness of its fruits, the Japanese melon is an interesting plant. The introducer of this variety says that seeds sown the 30th of March gave the first ripe fruit the 12th of June. He advises to try to cross it with other species of early melons, hoping thus to obtain something still more desirable. The Pine apple and the green-fleshed Nutmeg varieties are thought to be particularly well adapted to be used in cross-fertilizing it.

CLIMBING NIPHETOS.

This variety was described in our pages in 1889. A writer in *The Garden* says of it: "This rose is proving itself all that was claimed for it, the flowers being as large, white and of equally as good shape as those of the type. Shoots some ten to fifteen feet long are very common upon this variety, and they produce flowers from almost every eye. As a white climbing rose under glass this must take the precedence of any other variety."

ATMOSPHERIC NITROGEN.

A large number of experiments have been carried on during the past few months by ATWATER, which confirm the view that nitrogen is readily absorbed from the atmosphere by certain plants when treated with "soil-infusion," and that the gain of nitrogen is dependent on the number of root-tubercles which the application of this liquid induces. SCHLOESING and LACERENT have also been carrying on an investigation into the same subject and with similar results. In commenting upon the results of these researches, BERTHELOT states that he regards them as a final proof that under the influence of microbes, leguminous plants can utilize and fix the gaseous nitrogen of the atmosphere.

EVENING PRIMROSES.

Oenothera missouriensis makes a splendid rockwork plant when grown on dry sandy soil and in full sun. In rich soil it makes too luxuriant growth to flower freely, and does not in consequence make such a good rockery subject. It forms long trailing stems with narrow shining leaves and large, bright yellow flowers,

which are borne in profusion all through the summer months. *Œ. tanacetifolia*, a Californian species with deeply cut leaves and yellow flowers, is also a good rock plant, and soon makes a large patch. *Œ. triphylla*, a very dwarf species with yellow flowers and irregular dentate leaves, is also worth growing, as are *Œ. eximia*, *Œ. taraxacifolia* *Œ. acaulis*, etc.—K., in *The Garden*.

NEW RACE OF DWARF DAHLIAS.

An account is given in *Revue Horticole* of a new race of dwarf dahlias which has been obtained by LEONARD LILLE of Lyons, France. Nothing is more curious, says the journal named, than these dahlias which bloom some weeks after the seed has been sown, when, sometimes, some of the plants are not more than four inches in height. Not only do the plants flower from this early period of their life, but already their tubers are perfectly formed—they are complete plants. As to the colors of the flowers, they pass from white to deep red, almost black, through all the intermediate shades; the variations are not less in what pertains to the dimensions and the forms of the flowers. All the plants bear single flowers.

PYRAMIDAL BIRCH.

This variety of the birch, *Betula alba* var. *fastigiata*, says *The Garden*, should find a place in every park and in every collection of ornamental deciduous trees. It is the exact counterpart among the birches of the Cypress Oak among the oaks. In addition to the peculiarity of its columnar habit of growth, it has the merit of retaining its dark green foliage much longer than any other variety of the European birches, and indeed longer than perhaps any other cultivated species.

GLADIOLUS RAMOSUS.

This, says the *Journal of Horticulture*, is the first of an extensive family to flower in the open border, where its magenta blossoms are effective in strong clumps about two feet, or so, from the front of the border when associated with other plants. The foliage is dark green, which sets off the brightly colored flowers, that expand during the month of June. It increases rapidly, and succeeds best when left undisturbed in the border.

PLEASANT GOSSIP.

A HORTICULTURAL OUTING.

Toward the close of August the writer with his wife and two boys took a summer vacation by making a trip to the islands of Lake Erie. We have made it a practice to take a little trip each summer for several years. The months of June, July, and the first part of August are busy ones, as our harvest of berries in good season requires the constant attention of all of us besides quite a crowd of berry pickers. After the 20th of August the blackberries begin to diminish enough so we can get away, and we slip away for a few days before the tomatoes and peaches and pears begin to demand daily attention. This year I had to figure a little to get even four days, but I got some extra pickers and by making two trips on Monday (we never pick berries on Sunday) we got off in good order Tuesday morning. I had the pickers on Friday again, my man looking after them, and getting a load of berries ready for Saturday morning.

As I did not get home until 11 p. m. of Friday and had to start for market at 5 of Saturday morning it will be seen that my trip was taken under difficulties. As a help in education I am greatly partial to travel and try to have my boys go whenever it is possible. Our route lay first to Cleveland and then over the Lake Shore Railway to a point just west of Sandusky, Ohio, where we changed the second time, taking a short railroad eight miles long to Lakeside. The west shore of Sandusky Bay is made into a promontory or cape by a body of water and marsh running back nearly parallel with the lake to Port Clinton about a dozen miles. At this place the Ottawa River empties and it is supposed that many years ago it emptied at Lakeside.

The strip of land between this old river bed and the lake is styled Catawba Island although it is not an island at all but a tongue of land two or three miles wide. Catawba Island was our objective point, where we were to attend the summer

meeting of the Ohio Horticultural Society, but our tickets went to Lakeside, where there is a Methodist camp meeting ground after the Chautauqua plan, the tickets being of the excursion order. The short railroad runs to Marblehead, a mile beyond Lakeside, where immense quantities of limestone and gypsum are quarried and shipped away. We were attached to a freight train at the junction and were an hour and a half going eight miles. When we finally got there we found about thirty friends lounging around the pleasant piazzas of the Lakeside Home and looking anxiously across the seven miles of water to the beach of Catawba Island. The boat time had been changed and we could not get across to the meeting. As the officers were mostly with us, they couldn't very well hold a meeting, so that went by default. Along toward night a yacht put out from Catawba Island but the breeze died away and the two or three passengers assisted the captain in rowing across, which they accomplished in about two hours. After supper we were all stowed in the little yacht and towed across by a noisy little tug, having a jolly time, the lake looking like a sea of molten metal. Here we found the balance of our expected friends and proceeded to discuss the published program although it was nearly nine o'clock. The meeting was held here because it is one of the noted and favored fruit regions of the Middle States. Catawba Island is a mass of broken limestone covered with a layer of fertile soil, and was formerly closely planted with vineyards and there is standing, as a monument of the former industry, a \$140,000 wine cellar now empty and unused. The grape rot came, and it being learned that peaches could be grown, the vineyards were uprooted and now it is one vast peach orchard, there being many square miles of trees, this year laden with fruit. The change in many cases was gradual, every other row of vines being removed and young peach trees planted. After five or six years the other grapes were re-

moved and the peaches allowed the whole ground.

We saw several orchards in this transition or chrysalis state. The largest orchard belongs to a Mr. ELLIOTHORPE and contains about 110 acres or over 18,000 trees and it is thought the output this year will be 12,000 bushels of peaches. Plums are being planted to considerable extent and we visited one orchard of 900 trees that produced last year \$1,750 worth of fruit. It is thought that this year's crop will exceed 500 bushels. A wheelbarrow curculio catcher is used to combat this pest and the jarring is kept up until mid-summer. This captures the plum gouger also and saves many plums that would otherwise rot through the attacks of this insect. The rot is kept in check by picking the diseased fruit as fast as it appears. The varieties cultivated in this orchard are Union Purple, Lombard, Pond, Magnum Bonum, Coe's Golden and Gueii. In both peach and plum orchards thorough cultivation is the rule. But few orchards have passed their prime, and health and vigor is the rule.

Opposite Catawba Island is Put-in Bay, so called because Commodore Perry put in here after the battle of Lake Erie, which occurred a few miles to the northwest. Just north of this is Middle Bass Island and beyond that North Bass. Kelley's Island, opposite Lakeside and Marblehead, is the largest and on the rising ground near the south shore is the Kelley's Island Wine Cellar, looking like a huge vault outwardly while inside it extends downward into the limestone rock forty feet. Scattered around are a dozen or more small islands varying in size from a few acres to half a square mile. Our flying visit would not permit of more than a steamboat ride to the various islands. From the steamer's deck Middle Bass seemed the prettiest. It looked like a vast garden and every inch of ground not occupied by buildings and roads was planted with vines or trees, all kept so clean and neat that it looked like a vast garden of Eden. There is a large club house on Middle Bass and no one can stop at the house unless recommended by one of the members of the club. These are wealthy men, many of them prominent Ohio politicians, and here the slates are fixed for Ohio campaigns.

Many come to stop over Sunday, and if there are more than can be accommodated those who have been there the longest have to move, beginning with the non-members. Rates are \$1.75 a day to all. A friend who spent a week there said it got to be very dull after the first two or three days.

On Put-in Bay a mammoth hotel is in process of erection which covers six acres. It is in a fine forest grove and its size gives some idea of the growing importance of these islands as a summer resort. This is the nearest northern summering place for Southerners, many of whom visit it and either stay here or stop for a while on their way to some of the many others more remote.

After the meeting we took a steamer for Toledo, forty miles distant, coming back the next morning. This is a delightful ride of three hours just at evening and many Toledo people reverse the trip, going to the islands in the morning and returning at evening, having four hours at the islands.

I regret to say that many seem to spend the four hours in filling up on the fortified wines made on the islands and freely sold to the visitors. Many car and boatloads of whisky and sugar stop at the islands and the adjacent main land, but what is done with these goods afterwards is something the resident grape-growers seem loth to talk about. The southwestern part of Lake Erie and Maumee Bay is very shallow and the steamers have to follow a certain channel indicated by stakes on either side for many miles. On the shores of Maumee Bay I am told the water is gradually encroaching on the land and many acres that were pastures a few years ago are now two feet under water. Toledo is fifteen miles from the lake and is growing very rapidly. The latter part of summer is often very warm at this end of the lake both on the main land and on the islands.

The loss of Tuesday cut short the horticultural meetings and not as much was accomplished as was expected, still some interesting papers were read and discussed but the length of this article precludes even a short report of them at this time.

L. B. PIERCE, *Summit Co., Ohio.*

HELIANTHUS MULTIFLORUS.

How many of the readers of the MAGAZINE, I wonder, have this plant in their gardens? In our vicinity it is seldom seen, yet it is a valuable plant. Mine has been covered with a mass of yellow bloom since July and great numbers have been cut off; in fact, the whole top of the plant has been cut away to make bouquets and yet it seems that two blooms come on for every one cut off. I do not hesitate to pronounce it a rival of *Hydrangea paniculata grandiflora* for the honors of queen of the garden at this season. It is a perennial. Just before winter sets in cut the top off close to the ground, throw a shovel full of manure over the roots and over this throw some leaves or waste litter as a slight protection; in the spring rake off the litter and spade in the manure around the roots; growth will soon commence, and later in the season you will be abundantly repaid for your trouble. This plant is said to be entirely hardy, but my experience proves it to be not so, except with protection in this latitude, 42°. The plant is increased very fast by division of the roots. In a few words it may be said that the plant gives a great many flowers with very little trouble.

H. C. T., *Dutchess Co., N. Y.*

THE BEAUTIFUL GOLDENROD.

The popularity of the goldenrod does not abate but apparently increases with the recurring seasons. The fitness of the goldenrod alone, or the goldenrod and aster combined, as a national emblem, becomes more evident to the public as the plant characteristics are better known, and in a happy mood President HARRISON made, perhaps, a prophetic allusion in his speech at Brandon, Vermont, when on his late trip in that State. Bouquets of goldenrod were presented in profusion and he remarked:

These gifts of flowers which you bring to me here are the products of your fields and not of your gardens. The beautiful goldenrod; it is pleasant to think that in this plant, so widely distributed, slightly diversified in its characteristics, but spreading over nearly our whole country, we have a type of the diversity and yet the oneness of our people; and I am glad to think that its golden hue typifies the

gladness and joy and prosperity that is over all our fields this happy year and, I trust, in all your homes.

In this connection it is a pleasure to reproduce the "Song of the Goldenrod," by GRACE DENIO LITCHFIELD, which lately appeared in the *St. Nicholas Magazine*. The smooth gliding rhythm, the accurate description, and above all the touches of true poetry in this composition will ensure for it more than an ephemeral life, while it spreads the fame of the "beautiful goldenrod."

Oh, not in the morning of April or May,
When the young light lies faint in the sod
And the wind-flower blooms for the half of a day,—
Not then comes the Goldenrod.
But when the bright year has grown vivid and bold
With its utmost of beauty and strength,
Then it leaps into life, and its banners unfold
Along all the land's green length.
It is born in the glow of a great high noon,
It is wrought of a bit of the sun;
Its being is set to a golden tune
In a golden summer begun.
No cliff is too high for its resolute foot,
No meadow too bare or too low;
It asks but the space for its fearless root,
And the right to be glad and to grow.
It delights in the loneliest waste of the moor,
And mocks at the rain and the gust;
It belongs to the people; it blooms for the poor;
It thrives in the roadside dust.
It endures though September wax chill and unkind,
It laughs on the brink of the crag,
Nor blanches when forests turn white in the wind;
Though dying, it holds up its flag!
Its bloom knows no stint, its gold no alloy,
And we claim it forever as ours—
God's symbol of Freedom and world-wide Joy
America's flower of flowers!

LILIES.

The following essay was read by Mr. HEPWORTH at a late meeting of the Paxton Horticultural Society, Dewsbury, England:

"Fair as a lily," "pure as a lily," "beautiful as a lily." Who has not often heard or used terms such as these to express their admiration for something beautiful? and who amongst us can gaze upon the newly opened flowers of many varieties of lilies without confessing them both fair, pure, and beautiful? The lily has been the theme of poets and historians from time immemorial, and if there has been one flower to compare with the rose in popular favor it has surely been the lily. It has long been associated with both the joys and sorrows of humanity, and at no period more so than the present, when its chaste and fragrant flowers are eagerly sought for. Of exquisite beauty, delicious fragrance, stately habit, the colors ranging from the purest white through many shades to the most brilliant scarlet, crimson, orange, and purple, banded with gold or with ruby-like spots, in height from one to ten feet, with flowers from two

to twelve inches across, and in season from spring till late in the autumn, such is the flower, the merits of which we have to discuss, and on the culture of which it is my privilege to offer a few hints.

Lilies prevail throughout Central and Southern Europe, in the Alpine districts, the Caucasus, Asia Minor, through Siberia to Northern China and Japan. A few fine species come from the mountains of India, whilst the United States, east and west, also contribute handsomely to the list. Botanists divide them into three groups—viz., the Archelirion, which includes all those with horizontal or drooping flowers, such as *L. auratum* and *L. speciosum*; the Eulirion, those with trumpet-shaped flowers, such as *L. longiflorum*; and the Isolirion, those with erect bell-shaped flowers, such as *L. croceum*, the old Orange lily. For the purpose of this paper I propose to treat them under the two heads of hardy and half-hardy—those adapted for outdoor cultivation, and those best grown in pots, because although the majority are said to be hardy, and may be so in well sheltered places in the south and west of England, yet we can scarcely expect to grow many of the best varieties out of doors in this district.

LILIES OUT OF DOORS.

The hardy lilies are pre-eminent amongst herbaceous perennials, and when planted under proper conditions none gives less trouble to the grower. The best possible place for most of them is in the border amongst shrubs where these are not too thick. The shrubs being mostly surface-rooting afford just the shade and shelter needful for the lilies, without exhausting the soil beneath them, and their noble flowers are seen to great advantage against the dark green leaves of the shrubs. They can also be grown in any ordinary flower border, and almost in any position if the soil is good, and if arranged according to their height—dwarf ones in front, tall ones behind—are very effective. Although the lily naturally likes the shade yet it must not be planted under the drip of trees, and wherever they are planted they require good soil, so that their flowers may attain due size and substance. A cool, moist, and shaded soil in summer is highly beneficial, and it should be well prepared to the depth of at least two feet. Most garden soils if dug to this depth, and given a liberal dressing of good manure from an old cucumber or mushroom bed, along with well-decayed leaves—real leaf-mold—will suit nearly all the hardy lilies. Good preparation of the ground in the first instance is essential, and should on no account be neglected, because most lilies are impatient of being often disturbed, and do far better when left alone for years together. The bulbs must be planted three or more together, and six or eight inches deep, and if the early part of the season is dry supply them occasionally with water.

All lilies may be propagated by seed; some seed freely, others scantily, and the seedlings retain their specific characters, though they may differ in variety. Hybrid lilies are almost unknown. Many persons have endeavored to secure new lilies by hybridization, but nearly all have failed; in fact, the liliium most stubbornly resists the intermixing of its species. To two Boston cultivators—Mr. FRANCIS PARKMAN and Mr. BROWN HOVEY—belongs the honor of having raised the two finest hybrid lilies extant, which they have named after themselves. Both are hybrids between *L. auratum* and *L. speciosum*; the first is like a deep red *L. auratum*, and the second like a deep red-banded *L. auratum*, and each one when ex-

panded measures one foot across. I have not yet seen either of these lilies in any English catalogue.

As it takes from five to eight years to grow a flowering bulb from seed it is not very much practiced. The mode practiced by Dutch growers, and also by our own nurserymen, is to take a large bulb and strip off a few of the outer scales; these are planted separately in small pots in good light soil, and the pots are plunged in slight bottom heat. They are sparingly supplied with water, and in the course of time small bulbs form round the base of each scale or clove. When these are about the size of peas they are carefully removed, potted separately in small pots, and commence life on their own account. This is only necessary with some sorts, as many of the varieties form small bulbs at the base of the stems, whilst in others, such as the Tiger Lily and *L. bulbiferum* they form in the axils of their leaves.

The hardest for outdoor cultivation is *L. candidum*, the Madonna Lily; this is an evergreen, and likes a rather heavier soil than most of the others, and not to be often disturbed. Another good one is *L. croceum*—the old Orange Lily. This is well known to everyone, and there are few plants which bear such a wealth of bloom as this with the same amount of trouble. *L. elegans*, or Thunbergianum, and its many varieties of scarlet, crimson, orange, and yellow; *L. davuricum* and its varieties; *L. chalcedonicum* or Turk's Cap, and its varieties; and above all *L. tigrinum*—the Tiger lilies—these are amongst the most showy of the family. *L. tigrinum splendens*, when well grown, is a gorgeous flower, and seen at a distance looks almost like a ball of fire. There are other suitable varieties which can be had from any catalogue, and which I need not stop to specify here; in fact, the varieties are so numerous that an interesting and beautiful border may be formed of lilies alone.

(TO BE CONCLUDED NEXT MONTH.)

THE FAIRY LILY.

On page 230 of the MAGAZINE is an inquiry as to the Fairy Lily. Dr. ASA GRAY describes it under the name *Amaryllis Atamasco* or *Atamasco Lily*, but as it comes under section *Zephyranthes* it is frequently called by the latter name or *Z. Atamasco*.

It belongs to the same order with jonquil, narcissus, daffodil, etc., but is more delicate and very beautiful. The colors of the species of *Zephyranthes* are white, pink and bright rose. The plant is a native of our Southern and Southwestern States, but it is also found in the West Indies and South America. The true *Z. Atamasco* (one of the best species) is found growing wild in Pennsylvania, Virginia and Florida. It has beautiful pink flowers that are very abundant and are produced during the whole summer. The bulbs are generally planted in early spring instead of fall, and, though they rapidly increase, they may be left undisturbed

for years in the open ground, but in many places they need some protection in winter. The name *Zephyranthes* comes from Greek words that signify "west wind flower." All of the species are beautiful and most are hardy.

MRS. W. F. WHEELER.

GLADIOLUS.

With me these beautiful flowers have been nearly a total failure this season; out of fifty choice named varieties and two hundred mixed sorts, not one quarter of them have bloomed, although the bulbs planted were large and strong. I attribute the failure to the long season of drought during May and June, those that did bloom all grew in a partly shaded situation; one bulb of *Pyramid* planted under the shade of a tall dahlia has thrived and bloomed luxuriantly while nearly all of those planted out in the garden exposed to the direct rays of the sun were a total failure. On examination I find many of them set for bloom but the buds have blasted. This proves to me conclusively that gladiolus to be grown successfully must be planted in a rather heavy soil and be partially shaded by shrubbery; light, gravelly soil will not do. Those varieties which withstood the dry weather and bloomed well are *Africaine*, *Ceres*, *Agrius*, *Coquette*, *Pyramid*, *Marie Lemoine*, *Martha Washington* and *Brenchleyensis*. Next season I shall plant all my gladiolus among dahlias and tall growing shrubs. Not only do they bloom better but the blooms last longer and are of finer form.

H. C. T., *Dutchess Co., N. Y.*

FLOWER NOTES.

The new seedling carnation "*Margaret*" is certainly a valuable addition to our annuals. It has the true carnation fragrance and general appearance, but whether hardy or not I have not proven.

I hope some one next year will try some of the *coreopsis*, *Golden Wave*, and the double blue *nigella* in mixed arrangement. Also the blue corn flower with all sorts of *coreopsis*. A very handsome color effect for late summer is blue *browallia* and white spiral *mignonette*.

Pansies grown from first seed of spring plants are now, August, in bloom, just

when those first ones are giving up the struggle with hot weather.

Recent rains have given the nasturtiums a fresh start, making a display of color with sweet peas on a wire fence between us and a neighbor who never before saw nasturtiums excepting a few dwarfs I had last year. Her indifference to them is compensated for by her admiration of carnations and balsams.

A group of hardy hibiscus is the grand display on our ground today. Not lovely, but magnificent, and a white hydrangea will soon complete the show of that corner.

Balsams grown on good rich ground have stood the past month's drouth bravely, and are now looking as fresh as in June and covered with bloom.

Last fall I protected some Tea roses in the garden by laying flat stones close around the stems, sloping away slightly and shall try it again, but shall first cover at least eighteen inches wide with sod, grass side down, then lay the stones. In the spring remove them and give a little manure stirred among the rotten sod, then replace the stones as soon as the fierce summer heat comes on. I would like to have other rose lovers try this and write of their experience. Not a week has passed since May without roses, although I have less than a dozen plants.

R. A. HOLTON.

CANNING AND PRESERVING.

For canning or preserving choose always the very best fruit. It should be thoroughly ripe, but firm and sound. In peeling be very careful to cut out all bruised spots. Reject whatever has the least trace of decay; it is ripe for fermentation, and may ruin the whole batch. To keep apples, pears, and peaches firm and well-colored, wash and drain well before paring, drop each one as the rind comes off into clear lime water, and let stay till all are finished. Take out upon a sieve, and rinse by pouring clear water through. If for canning, pack close in your jars, and set in cold water up to the neck. Bring it to a boil, while you make a syrup of half-pound of sugar and half-pint of water to each pound. Cook five minutes after the sugar melts. Skim well, and fill the cans brimful of it. Let them stand two minutes, then fill again if it has

sunk below the top. Press the fruit well below it with the back of a spoon, and seal at once. If the cans are of glass, be careful to set them on something warm when they are removed from the water. A sudden chill will burst them, and make all your labor vain.—*Harper's Bazar*.

FIG TREES AT THE NORTH.

I have on the south side of my house a fig bush that has three sprouts almost three feet high. This winter I intend strawing them up, the same as is done with rose bushes, then turning a barrel over the top and placing some manure around the bottom of the barrel. Will you please let me know if that is the right way? CHISHOLM, *New York*.

In the climate of New York the proposed protection will probably be sufficient. In this locality some figs are cultivated in gardens and these on the approach of cold weather have their branches tied together, when the body of the tree is bent downwards, as closely to the ground as possible, and held there by being tied down to stakes. The tree is then covered over and around with boards, and over these is placed a thick layer of straw, and lastly a covering of four or five inches of soil. In the spring when the covering is removed the tree is bent back to its original upright position. Even very large bushes or trees can be bent over and protected in this manner, as the stems are very flexible.

THE WORLD'S FAIR.

J. M. SAMUELS, of Kentucky, has been appointed and confirmed as Chief of Horticulture for the Columbian Exposition. Mr. JOHN THORPE, of New York, the well-known florist, is the head of the division of Floriculture. These appointments are quite satisfactory to all horticulturists, giving them full confidence that their interests will be properly cared for. Mr. SAMUELS, who now occupies the high position, which has been so warmly contested for months, is a practical fruit-grower and a man of fine executive abilities.

HYBRID CANNAS.

A wonderful improvement is going on among cannas by means of skillful crossing by French cultivators. The flowers are greatly enlarged in size, and the colors and markings are indefinitely varied. During the whole of August and Septem-

ber they have shown a blaze of color. These will be largely used, and with great advantage to the late summer and autumn decoration of the garden. The following notes of some varieties were taken the latter part of August.

Brilliant.—Tall, large leaves, foliage reaching about three feet high, spike of ten to twelve flowers, flowers medium size, petals rather narrow, glowing crimson.

Tête d'Or.—Tall, leaves large, three to three and a half feet high, surmounted by a tall flower stem bearing an ample spike of large, orange salmon flowers.

Goldfinch.—Tall, large leaves, tall spike of medium sized flowers with reddish spots and blotches on a yellow ground.

Star of 1891.—Very dwarf grower, leaves medium size crowded on a short stem; flower stems short, bearing successively twenty or more very large reddish orange flowers. A very distinct and showy variety.

Lutea splendens.—Dwarf, spikes tall, flowers medium size, bright canary yellow, faintly spotted with red.

Jules Chretien.—Medium to dwarf, foliage ample, closely set, leaves large, flowers very large, borne on a stem of medium height, thickly set, large, blooming freely, bright crimson.

Chevalier Besson.—Very dwarf, leaves medium size, flowers medium, cardinal.

Capricieux.—Dwarf, spikes tall, flowers medium, spotted and suffused with orange red.

Edouard André.—Dwarf, leaves large for the size of the plant, purple tinted, flowers large, purplish crimson, not blooming successively from the base to the apex, but the spike at all times showing a number well set to display to the best advantage—very handsome.

Victor Hugo.—Dwarf, leaves large, clouded with a shade of purple; flowers medium to large, broad petals, bright crimson—very handsome.

Tonkin.—Very dwarf, leaves medium size, short spike of large flowers, canary yellow spotted and flaked with maroon.

Revol Massot.—Dwarf, leaves rather long and narrow in comparison, rather tall spike of brilliant crimson flowers, petals long for the width, the lower one marked with golden yellow.

Madame Gobet.—Very dwarf, leaves medium size, flowers on a short spike, very large, bright scarlet.

Louis Chrétien.—Dwarf, leaves medium size, flower spikes tall, flowers very freely produced, large, bright yellow, spotted and flaked with crimson.

Cardinalis.—Dwarf, foliage medium size, bluish tint, vigorous, flowers medium size, brilliant cardinal.

Adolph Weick.—Dwarf, leaves long, spike tall, flowers medium, bright crimson.

A. Crozy.—Medium size, leaves large, bluish tint, flower spikes tall, flowers large, purplish crimson.

Admiral Courbet.—Medium size, spike tall, free blooming, flowers large, clear canary yellow spotted with orange red—handsome.

Antoine Chatin.—Dwarf, leaves large, thick set, spike medium height, flowers large, brilliant orange red—very handsome.

President Faure.—Tall, leaves large, wholly suffused with purple, spike tall, flowers medium, orange crimson. A handsome plant on account of its very striking foliage.

Gen'l Boulanger.—Very dwarf, leaves large, spike medium, flowers medium, canary yellow spotted with orange red, very free blooming.

Montorii.—Medium, spikes medium, flowers large, bright crimson.

SWEET PEAS.

A very able treatment of the subject of the cultivation of sweet peas is given by the Rev. W. T. HUTCHINS in the Tolland County (Connecticut) *Leader*. The writer notices the position this favorite flower holds in the Massachusetts Horticultural Society, which offers special prizes and sets apart a special exhibition for it, the show day, August 1, being called Sweet Pea Day. For the culture of this flower Mr. HUTCHINS gives six rules.

"Of course," he says, "such general rules as rich ground, sunny exposure and thorough weeding are understood. The special rules are: 1. early planting; 2. deep planting; 3. extra fertilizing; 4. strong bushing; 5. watering; 6. free picking; which means keeping the pods off. Early planting means just as soon as the ground can be worked. By the first of April they should be in. They are very hardy, and like the earliest garden peas need to make their root growth in the cool, moist, spring ground. Frosts

need not be feared. Sometimes they are planted in the fall. Deep planting is very important to guard against the drought of mid-summer. But here is a difficulty. They should be planted five inches deep, but to cover them with five inches of cold, wet, March soil almost insures failure to get the sprouts above ground. Hence they should be sown in a trench or furrow at the right depth, and covered but one inch at first. As they grow, the earth is filled in, until when leveled, they are at the right depth. They should be sown in a double row about ten inches apart and the seeds dropped an inch and a half apart in the furrows. By extra fertilizing is meant the application of such stimulants as wood ashes, bone flour and nitrate of soda. The garden should be well manured in the fall to give the soil a good body of vegetable matter; but to get a quick growth of thrifty vines and early flowering, the above named plant foods are excellent. Scatter the wood ashes on in the winter. Hoe in the bone flower just before bushing. And in May scatter along just outside the rows a handful of nitrate of soda for every four feet, stirring it in, but not to have it come into immediate contact with the vines. Then watch them grow a foot a week in June: and look for blossoms a month ahead of the man who believes in the 'good old way.' Then this kind of cultivation means strong and tall bushing. Get the best birch tops, at least seven feet high, and, if two inches thick, all well, and set them firmly in the ground with a crow bar. Bush between the double row, and train the vines to the bushes if they rebel. Plenty of water is a safe injunction, but quite necessary in case of a dry season. A rainy summer is very friendly to sweet peas, and gives us doubtless about as good condition as they have in the moist climate of England where they flourish. Pick blossoms every day. Sacrifice the pods if they come, you want blossoms from June till October. Buy fresh seed from a reliable seedsman. You cannot have blossoms and save your own seed. And, if you did save it from a mixed row, it is very sure to be unsatisfactory.

EARLY GARDEN.

Our garden ground is heavy and cold, making plowing late, and early vegetables impossible, unless prepared for in the autumn. Last year we had a strip thrown up by spading and ditching which was planted before plowing time to some advantage. In the fall a few onions were set in a part of this bed and quite late covered with straw manure. Another section, where lettuce and radishes had been, was well worked and covered with the same.

In the spring we began with the onions by chopping them out of the frozen ground. The lettuce was ready before the snow squalls were past, while the radishes were earlier and of better quality than those from seed planted on this strip as early as the ground could be stirred. Waiting for plowing to be done was vexatious, therefore I made a warm nest fac-

ing the South and sheltered, and planted musk melon seed broadcast, freely, and covered it lightly. The plants all came on in time to transplant to the onion ground as soon as the latter were out of the way. My friends laughed at "such foolishness" but not a melon failed, and not a bug found them, and now, in August, we are eating the fruit while all other melons are green. Blackberries are gone and peaches are not yet plenty, so the sweet little melons are appreciated by those who laughed.

R. A. H.

THE FAIRS.

The permanent location of the New York State Fair has improved the opportunities for fairs in other parts of this State. It appears probable that besides the State fair which is now permanently located at Syracuse, at least three other fairs in the State will attain prominence and permanence, namely, the Western New York Fair, held in this city, the Inter-State Fair, at Elmira, and the New York and New England Fair, at Albany. The last two have already taken place and at each the exhibits in nearly all departments were satisfactory and some highly so. At the Albany fair, held from August 26 to September 1, live stock was well represented and, also, the mechanical department. The display of ornamental plants was not equal to that of last year. The show of fruits was fair, apples leading. The vegetable department was fairly good. The weather was very unfavorable during the whole time of the fair, preventing a full attendance.

The Inter-State Fair, at Elmira, was held from September 1st to 9th. The live stock exhibit was large and fine. The mechanical department was well represented. The show of fruits was light and not as good as would be expected from the territory that supplied it. The collection of vegetables was very fair and some fine specimens were shown. The display of plants and flowers was large and fine, and exceeded the expectations of all. Floral Hall was a blaze of color and beauty and did great credit to the superintendent, Mr. F. M. CHASE, by whose taste it was arranged; a portion of the exhibit was made in an adjoining tent. The collection of cut flowers was large and va-

ried, the exhibitors competing with much spirit. The display of greenhouse plants was very fine, including some excellent specimens of palms and ferns. Floral Hall was one of the great centers of attraction at the fair and was visited by thousands of people. The weather the first three days of this fair was fine and on Thursday, the third day, at least twenty thousand people were present. Some wet weather afterwards diminished the attendance, but on the whole it was good. This fair is apparently very popular and there can be no doubt of its success. Its young and wide awake president, GEORGE BRAND, and its genial secretary, GEORGE M. ROBINSON, are alive to all the interests of the Fair, and we judge all the membership are working together for substantial success.

At the present time, September 15, the New York State Fair is being held at Syracuse. The weather has been very favorable and there are very large exhibits in all departments. The show of fruits is the largest ever made in this State, if not in the country. The collection of vegetables is also very large and fine. The result of this exhibition will contribute largely to the welfare of the society.

The Western New York Fair is to be held in this city commencing September 21st. Its present prospects are good.

A TRAVELER'S LETTER.

This is the 7th day of August, and I have just returned from a run through the public market in my native town, Derby, England, where I am visiting. I observed one collection of a dozen dahlias which were magnificent, some of them, though not yet fully blown, measuring six inches across. Of those I most admired were Maud Fellows, white, tinged with pink, Wm. Rawlings, maroon-purple, Colonist, terra-cotta; R. T. Rawlings, yellow, especially fine, and Mrs. Douglas, brilliant scarlet. Bunches of Cactus dahlias, nine blooms, for 6d. (12 cents), some measuring four to five inches across. I was surprised to see such a quantity of tomatoes. While much of this stock is sent from Paris, a great deal is raised in England, under glass. I had a pleasant visit with a Mr. HENRY GREGORY, an amateur horticulturist, who showed me his greenhouse,

which, though only 75 x 50 feet, is a very profitable investment. On the side benches and in the center were tomatoes—such fine, stocky plants! They were set about one foot apart, staked, and ran as high as five feet. Some plants had on as many as seventy tomatoes. His yield was enormous, and the wholesale price runs from 6d. to 9d. per pound (12 to 18 cents). But this was not all. Under the side benches he had as fine mushrooms growing as any one would wish to see. The beds were literally thick with clusters of this delicious vegetable. He finds a ready market for them at 10d. (20 cents) per pound.

I wonder more Americans do not raise mushrooms, especially considering the slight expense and the good price obtained.

I would like to describe the lovely roses (outdoor raised), gloxinias, etc.; also a visit to Covent Garden market, London, but I have already written enough.

JOHN HALL.

AMERICAN FLORISTS.

The annual meeting of the Society of American Florists, which was held in Toronto from the 18th to the 20th of August last, was pleasant, profitable and wholly satisfactory to all in attendance. Mayor CLARK, of Toronto, welcomed the guests in behalf of the Canadian florists. His address was responded to by Judge C. W. HORT, of Nashua, N. H., who was particularly happy in his speech, producing the pleasantest feeling imaginable among the whole company.

President NORTON's address was practical and contained many good points; some of them will be found here:

To the young man with visions of future prosperity, who aims to become a successful gardener or florist, I would say, do not forget that it is not so much the opportunities as the use made of them that tells in the end. Good honest toil during working hours together with that intelligence which can only be obtained by study during leisure, will give you the reputation of being faithful and industrious. While I believe recreation after working hours, to be necessary and desirable, yet to devote every evening during the week to pleasure is a neglect of opportunities which is sure to be felt in after years, and will do much to blight the hopes of ambitious young men. Constant work without intelligence may become a burden, but with it work will be turned into pleasure and profit.

The tendency now is to grow specialties. Some take to roses, and a very few varieties; others to carnations and violets; others to bulbs and chrysanthemums, and many to bedding, stove and greenhouse plants.

The first thing to be done is to decide on what you wish to make a specialty of, for, as a rule, the greatest success is attained by having one principal money crop. Then choose a good location where the soil is best adapted for the particular plants you wish to grow. Be sure and locate near a railroad station or within easy access to the nearest market, then erect such houses as are best fitted for the plants you take a live interest in. That florist will succeed best who will take the greatest care in preparing his flowers for the market, culling out and throwing away the poor ones. Far too many of the ordinary or inferior class of flowers are grown.

* * * * *

Florists in general are to be congratulated upon the great advances made in the arrangement of cut flowers. The loose natural way of putting them together with their long stems and beautiful foliage with an eye to harmony of color and artistic effect, and the custom of using one or two colors only in each design, is a long step in the right direction, and a vast improvement over the style of a few years ago, where match sticks, corn-broom, toothpicks and wire were supposed to be indispensable factors in making up designs, and an endless variety of flowers of colors were packed stiffly together into what was wrongly called artistic work. * * * * *

This society has done much to do away with senseless jealousies and bad feeling in the trade. The local clubs are doing a good work in the same direction, and those who have not a club in their city or town already should organize one right away. Frequent meetings with your neighbors in a business or in a social way cannot result otherwise than in a mutual benefit. * * * * *

We should not forget the ladies. I would recommend they be given the opportunity to enter the business. More especially in the retail stores will they be found very useful, not only as book-keepers and cashiers, but in waiting on customers and in putting up orders. Their correct taste and their aptitude for recognizing the beautiful in form and color will make their services desirable as artists and designers, where harmony of color is so essential. There are many women today throughout the country that are doing a profitable business on their own account, and there is room for many more in an occupation which is so appropriate and pleasant.

The president advised the encouragement of public exhibitions of plants and flowers; he, also, urged that action be taken in regard to assisting in making an exhibit at the World's Columbian Exposition at Chicago, in 1893. JAMES DEAN, of Bay Ridge, N. Y., was elected president for the ensuing year, and W. R. SMITH, of Washington, D. C., vice-president. The next annual meeting is to be held at Washington, D. C., next August.

TEA IN AMERICA.

Oolong from the Island of Formosa is reported to be the most popular with consumers, although in quality hardly equal to the fine Foochow tea. India and Ceylon teas are chiefly acceptable to educat-

ed palates, which do not comprise many of American origin, for the reason that their education has been neglected. Hence the liking for unwonted flavors is not wide-spread. The truth is that Americans are not a tea-drinking people, and that the annual *per capita* consumption of $1\frac{3}{8}$ pounds has been virtually stationary for the past forty years.—RICHARD WHEATLEY, in *Harper's Magazine*.

COLORED PLATE OF NARCISSUS.

Our colored plate of this month shows three forms of narcissus which are hardy in our climate, one double variety and two single ones. The double variety is a light yellow known as Incomparable; its flowers are like double roses and produced abundantly; the single yellow, Campenel, with its central bill-like crown is a very beautiful form and quite fragrant; it is sometimes known as the Great Jonquil. The single white with the yellow, crimson-edged cup is Poeticus, the sweet narcissus of the poets and is one of the most showy and beautiful.

Some of the other best hardy kinds among the single varieties of narcissus are the Hoop Petticoat variety and Etoile d'Or, and the Gold and the Silver Trumpet varieties. Among the desirable double sorts is the double white one which is very sweet scented, also, the Orange Phoenix, its color indicated by its name, and Silver Crown, and the yellow daffodil, known in the trade as the Van Sion. The beautiful sweet-scented jonquils, both single and double, are quite hardy, and all that have been noticed are among the finest of the early blooming plants of the open garden.

A NEW PRACTICE.

A peculiar practice in transplanting trees is described by H. M. STRINGFELLOW in the *Southern Horticulturist and Farmer*. By the way, this journal, published at Bryan, Texas, is showing much ability and should be read generally by those interested in horticulture at the South. The new practice consists in cutting away the roots of young trees taken from the nursery, leaving not more than an inch or two below the collar, and shortening the tops so as to leave them not more than two feet long, and then setting out the stems as cuttings. It is

claimed that the stocks submit to this operation, and, if properly planted, make new roots which at once strike deep into the ground and produce trees of greater vigor and vitality than those planted with their roots. These last, it is said, throw out surface roots which never descend deep and have a tendency to dwarf the trees and to diminish their vitality. A large array of facts is presented to substantiate the new theory. The subject is one of much importance and those interested should read Mr. STRINGFELLOW's remarks in full as published in the journal mentioned. We have no doubt that many enterprising horticulturists will experiment with these ideas.

OCTOBER WORK.

The present month will have its work to do in the garden, varied according to locality and peculiarities of individual places.

Fruits and vegetables will need to be gathered and stored.

Tender plants turned out for the mild season and which have not yet been moved will require attention before frosts damage them. Bulb-planting in the open borders and potting for the house will need to be done. In the lower Middle and Southern States spinach seed can yet be sowed. At the far North roses may need protection by the last of the month, but this work can be postponed until later in lower latitudes. The winter covering should not be given until about the time of hard freezing. Except upon light, sandy soil, digging the garden ground in the fall and leaving it rough for the action of frosts will be of great benefit; so also, any lands of greater extent and intended for early spring crops, such as onions and peas, will be improved by plowing in the fall, the only exception being sandy soils. Except in the more severe climates, the transplanting of trees and shrubs and herbaceous plants can be carried on this month. It is well to place a good mound of earth around newly planted trees for the first winter and which can be removed in the spring; if tall, such should also be securely staked to prevent the action of the winds on them. Newly set herbaceous plants and bulbs should have a covering of leaves.

OUR YOUNG PEOPLE.

ROXIE.

Roxie Fenton having done her errand, loitered a few minutes where Mrs. Canfield and a daughter were planting a quantity of bulbs ready for a choice display of bloom the coming spring. At the same time her ears were regaled by the piano music that floated through the open doorway from the magic finger-touch of another daughter.

Roxie was passionately fond of music and of flowers. While she listened rapturously, she was thinking that she could never have any really choice kinds of flowers because of their cost. At the same time Cora Canfield was saying:

"It will be a pleasant consciousness all winter to know that we have these bulbs tucked snugly away, ready to do their prettiest in the spring without further trouble on our part. From the snowdrops, scillas and crocuses, to the tulips, narcissi and hyacinths, all will be in bloom before anything else thinks of venturing a bud. And, Roxie, now that we have "spring beauties" nicely started all over the lawn we shall make a patch here and there of snowdrops by way of variety."

"How can you make the wee bulbs grow thriftily among the grass roots?" asked Roxie.

"By punching holes through the sod, right after a rain, with something as large as a hoe-handle, or larger, and then filling them with good soil and pressing it in slightly. In each place one bulb is planted about two inches deep, the soil again pressed to keep them from being thrown out by freezing."

A little longer Roxie dallied to listen to the music, and then, saying "Good morning," hastened homeward, wondering by what mysterious decree Cora Canfield should be the landowner's daughter and she herself the daughter of his tenant.

But Roxie had a deal of strong, good sense, and knowing that such thoughts are unprofitable if not sinful, and that they breed discontent and paralyze effort, she

put them away from her with the resolve that no false pride should hinder her from making the most of every opportunity, however humble, for helping herself and those whom she loved. "Yes, I'll do it," she said to herself emphatically, "I can't help what people think. The home folks will feel hurt the worst; it's for them I'm sorry;" and she shut her teeth in desperation and strode along in the hot October sun thinking only of the shock she was about to give the family.

Entering the low kitchen door, heated and tired, she threw off her sun bonnet and dropping into a chair exclaimed with energy:

"Well, I've made up my mind, for certain!"

The elder sister paused in her bread-kneading, looking askance; the two younger girls, Cassie and Bess, suspended their peeling of apples and potatoes; and with three questioning faces turned towards hers, Roxie repeated:

"Yes, I've made up my mind; I'm going to leave home."

"It seems to me," said Myra anxiously, "that you never go to Mr. Canfield's without coming back all out of sorts. What's the matter now?"

"Just what's always the matter; there are too many in this family for a rented farm. We eat up and wear out all the profits. There's never anything left over except for bare necessities. Look at this hot sun-bonnet I've worn all summer; couldn't even buy a cool sun hat because I had to have mits and handkerchiefs for church-going. Father thinks we must all go, rain or shine, else we might use each other's things sometimes. I don't mind the going though, for it's about all the change we get from this hum-drum life . . . and I do want to be a good Christian," she added slowly.

"But I'm sick of being forever pinched and scrimped in what I want. And so are you, Myra; and if you weren't an angel

you couldn't have borne what you have so cheerfully since we lost our mother. Now, I'm not angelic myself, and can't be so patient when I see no prospect of anything better for us. There's poor James, always lame and absorbed in his books; and Elmer—tho' good as gold—was born tired (I wish I could put some of my energy into him); and father is getting old, dear man. Yes, there are too many of us here; I'm going away."

Then Cassie, who never yet had been able to see the sombre side of life, said:

"There are plenty of ways for thinning out the family without your having to leave it. Although I'm not going to spoil a good piece of rope, nor waste any precious rat poison, I might run away as well as not if I can think of a good place to run to; for I can be spared from the family much better than you can."

"You dreadful girl! to say such things," gasped Roxie. "I wonder what father and the rest would do if you were not here to drive away the blues when that condition threatens. No, I'm the one that can best be spared. You two girls are now old enough to more than fill my place."

"Are you going to teach school, Roxie," inquired Bess.

"No, indeed; I'm not competent to stand the test of the fearful examinations that teachers now-a-days have to undergo. And 'twould only be inviting consumption, earlier than our mother had it, for me to become a dressmaker or milliner. And I shall never stand behind a counter. Intelligent people, who have made a study of vocations for women, claim that there's no occupation more healthful than that of ordinary housework. I intend to get a situation to do such work in a nice family in town."

"Roxanna Fenton! You—a 'hired girl' in somebody's kitchen! We sha'n't let you."

"Don't be foolish in this day of cooking schools, but remember that a girl working in any capacity for wages, or on a salary, is a *hired* girl."

At this point Mr. Fenton appeared and was excitedly informed of Roxie's scheme. He looked pained and grieved with conflicting emotions, feeling almost rebuked

for his inability to provide a competence for his family.

"Don't feel a bit troubled, father," said Roxie, "but listen to this;" and she produced a tiny newspaper clipping from which she read:

"Wanted—A girl from a quiet country home to do general housework for \$2 per week in addition to piano lessons. No laundry work required."

"Father," Roxie hurried to say, "I couldn't sleep last night for thinking of this, so I got up and wrote for the situation, though the letter is not yet mailed. I am of age now, and Cassie and Bess are so well grown they can give Myra the necessary help. I am not really needed here. I will confess that the piano lessons are the attraction in this particular case, for I am always music-starved."

"But how are you going to break in those fingers of yours at this age?" asked the wise father.

"My fingers are as pliant as anybody's," said Roxie, twisting and bending them about each other, "and I don't expect to become expert; if I can only learn to play accompaniments to our favorite home pieces and our Sabbath School hymns I shall be satisfied. Aunt Roxanna has always said I'm to have her piano whether I play or not."

"Well, well," sighed the father, "I hope Providence has directed you in this matter. You've always been a good girl, Roxie, and we—we shall miss you. To no other kind of situation could I consent for a daughter of mine to go. A home in a good family is the only safe place for girls."

So the letter was mailed; and though there was a small storm when the brothers joined the family, yet being conscious of inability to better their sister's condition they yielded the point, and finally made the subject one for jovial banter.

Myra, who felt she must maintain the equipoise of the family, seemed impassive before the others, but wept bitter tears in secret that necessity compelled her to assent to the separation. Cassie, too, had her secret fits of passionate weeping, tho' quite unsuspected by the others, so ready was her laugh and repartee on all occasions. In the meanwhile Roxie's nimble fingers were putting in repair her scanty

wardrobe and adding thereto such small additions as seemed possible.

Sooner than expected came an answer of acceptance from Mrs. Dunn. She had liked the tone and style of Roxie's letter, she wrote, and should be glad to welcome her at once.

"I may as well explain to you now," she added, "that at the time of my husband's death there was still a mortgage of \$600 on our nice home, and I have undertaken to 'lift it' by utilizing my musical education. Much money was expended in its acquirement and it is right that some money should be realized from it, if by making the exertion I can save the home for my children. This will explain to you the necessity for certain small economies which you might not expect in a home like ours, and could not otherwise understand.

"I am gratified that you care to inquire about church and Sunday School; you shall have opportunity to attend both. As for myself, my church privileges are very dear to me. And now a few words more. My father used to say: '*There's a right place for every person, and a right person for every place.*' The trouble is to bring them together."

"These words came to mind when I was well-nigh hopeless of ever getting efficient assistance in my household department, and seemed like the straw to the drowning man. I said to myself, 'If there's a right girl for this place I'll see if I can find her;' and after some earnest thought that advertisement was the result. I now believe it was an inspiration. I write thus freely thinking that your family will be the more willing, perhaps, to trust you to me. With best wishes for you and yours believe me sincerely your friend,

EMMA DUNN."

This letter proved a panacea for the anxieties of the whole family, while Roxie herself was jubilant over it. "A nice home," she thought, "with a Christian woman as mistress of it, and piano lessons besides;—what more could I ask?"

When the parting came she said, "I'll post you a card immediately to let you know of my safe arrival, and at the end of two weeks will write you a letter. By that time I shall know what to say."

At the end of her journey Roxie saw a

boy at the station gazing intently at the dispersing crowd, and suspecting he was seeking her she approached him, inquiring with a smile: "Are you looking for your new 'hired girl?'"

He gave a short, surprised laugh and answered: "Yes'm, but I didn't suppose you were the one."

"Don't you think I'll do?" she asked.

"O, yes'm; if you can stand it, we can, sure. But mamma doesn't allow her help to be called hired girls, and so you needn't call yourself that."

After securing her trunk check and conducting her to a hack, giving proper street address to the driver, the manly young fellow went to look after her small luggage,—a true gentleman, every inch of him, properly trained by a true lady mother.

Roxie having alighted at Mrs. Dunn's dwelling, a brawny, middle-aged woman answered the door bell and ushered her into the presence of a pleasant-faced, sweet-voiced woman, who gave her a friendly greeting and directed that she be shown right up to her room, made ready to receive her.

It seemed that Mrs. Dunn's published notice had done double duty by also bridging the gap between the outgoing and incoming help. The present incumbent had noticed its proffer of music lessons and had sought the position for her "young lady daughter" for that reason. Too young she was, however; and so she, herself, had consented to remain a few days for household service.

"Was it all a 'happen so?'" Mrs. Dunn pondered.

With a nervous eagerness to please, and with many misgivings as to her country way of cooking and serving food, Roxie entered upon her new experience. How it seemed to her during the first two weeks can best be told in her own words.

MY DEAR ONES, ALL:

I know you must be anxious for the promised letter and now you shall have it. First of all, I must thank you for the many letters you've sent me. You knew I'd need them, these first few days. They've kept me from being home-sick. The 'family letter' was a lovely idea. Have another sheet of foolscap, with pen

and ink handy, where all can jot down something just as they think of it.

Of course, Cassie, I want to hear about Topknot and the bow-legged rooster, and the twin calves, and the prize pig that had cholera, and everything else. But if I indulge myself in this strain I shall write all night.

My position here, considering what it is, proves pleasanter than I had expected. The conveniences for doing work make it much easier than it would be with our ways at home. Mrs. Dunn does not always tell me her ways of cooking an article, but says to cook it my way—that perhaps it's better than hers. She is not very strong and sometimes says she is so weary she cannot think.

There are three children; the oldest is a boy and a nice boy he is, too. He can do almost anything that I can; gets his meals when his mother has no help and is busy with her scholars. When we had guests in the house for a day or two, he wiped the dishes for me, and has done it on bread-baking and ironing days. As I do no washing, not even my own, I don't mind making bread if all the neighbors do buy theirs from the bread wagons. Mrs. Dunn says they are envying her our home-made bread.

The children are great company for me, especially the girls. The younger one is already my pet and coaxes to sleep with me. She lies in bed here now. My room is pleasant and cozy, with pretty carpet and wall paper, nice bed and mirror and every convenience. This is a great deal to me and helps me to be contented.

When I'm shut in here I feel at home. My wages have been paid each Saturday night. I like that. Like a child I count ahead and say, One week more and I'll have six dollars.

Do I eat with the family? How many of you have asked me that question? I'm ashamed of you. *I do if I want to.* But I've got too much sense to want to, when I'm heated, and my clothes are mussy, and there are utensils that I like to wash before they are all dried up. I can easily save over something warm for myself if I care to; and I've too much *self-respect*—I'm too proud, to want to do what isn't just fitting and proper. The family at table are all sweet and fresh and clean, with hair nicely brushed, and if I feel less tidy than I like to be, I please *myself* by doing extras in the kitchen meanwhile, that makes my after-dinner work very light.

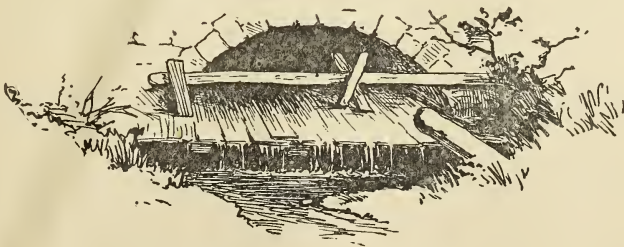
I've been to church and Sunday School both Sundays. The minister received a note from our home minister and has already called on me. I judge from his very cordial manner that he must have heard some good word of me.

How you've all clamored (with your pens) to know about my piano practice! Father was right about the difficulty of breaking in my fingers. But I'm making some progress and am bound to accomplish what I set out to do. Now good-night and good-bye. Keep on loving me, and write when it does not tax you to do so. Lovingly,

ROXIE.

And thus closes brave Roxie's sensible letter.

MARIA BARRETT BUTLER.



To the Customers and Friends of James Vick, of the Rochester Seed House, and Subscribers of Vick's Magazine.

This issue of the Magazine has been unavoidably delayed, owing to circumstances beyond the publisher's control.

From this time on, however, it will be issued regularly, and, commencing with the November number, the shape of the Magazine will be changed to three columns to the page, and the price reduced to Fifty Cents per year. Old subscriptions will be filled with the new Magazine, which will be published by the VICK PUBLISHING CO. It will be an improvement, and will, we are sure, please everybody.

An office for the advertising department will be located at 38 Times Building, New York, in charge of MR. H. P. HUBBARD.

All communications in regard to subscriptions and editorial work should be sent to Rochester, as heretofore.

Respectfully soliciting a continuance of past favors, we are
THE VICK PUBLISHING CO.

The seed business will hereafter be conducted by JAMES VICK'S SONS, who are in first-class shape to fill all orders promptly, either for Bulbs, Plants or Seeds.

In the reorganization of the business, arrangements have been made which will enable us to take better care of orders than heretofore.

This grand old Seed House was founded in 1849, by the late JAMES VICK, and incorporated in 1885 as James Vick Seedsman, and now the change is made for convenience to JAMES VICK'S SONS, all of whom have been in the business since childhood, and are thoroughly experienced and practical in every department.

The filling of retail orders will receive especial care and attention. Only the best strains of the choicest varieties will be selected.

Our *Floral Guide* will be issued about January 1st, 1892, containing a revised list of the most worthy varieties of Flowers and Vegetables, with colored plates and illustrations of some excellent novelties that have been tried and proved to be of rare value. Don't fail to write for our *Floral Guide*.

JAMES VICK'S SONS, ROCHESTER, N. Y.

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Like a tiger in the jungle, may never be suspected until the danger suddenly presents itself. The skillful physician, however, like a trained hunter, easily detects the lurking foe, even when no symptom is visible to others. There are signs, known only to the expert, which reveal the startling fact that a majority of the human race is affected with Scrofula. It is an hereditary taint, and among the diseases of which it is the parent, are Cancerous Ulcers, Catarrh, and Consumption. To expel Scrofula from the system,



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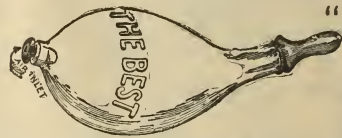
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 - 1 Bulb Winter Aconite, large golden yellow and our
- SUPERB FALL CATALOGUE of Bulbs and Plants for Fall Planting and Winter Blooming,** together with a sample copy of the Mayflower, and large colored plate of premium flowers. If you have already received Catalogue and Mayflower, say so and we will send something else instead. The above 10 fine bulbs (which is our "Gem Collection" worth \$30 may all be planted in pots for winter blooming, or in the garden. Every one will bloom splendidly and for winter flowers there is nothing finer. We send them for only 30 cents to introduce our superior Bulbs. Get your neighbors to order with you. We will mail 4 of these Gem Collections for \$1. Order at once, as this offer may not appear again. Also by mail, postpaid, 12 Fine Mixed Tulips for 35c., 6 Fine Mixed Hyacinths for 50c., 12 Mixed Narcissus, 50c.; 25 Fine Mixed Crocus for 20 cts.

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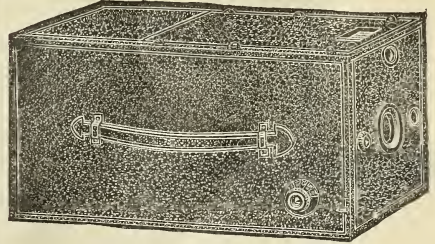

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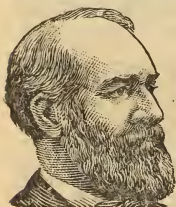
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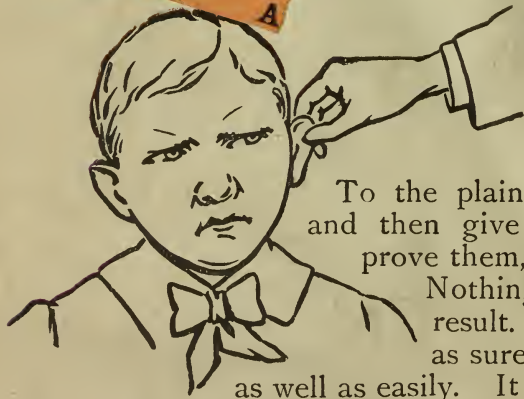
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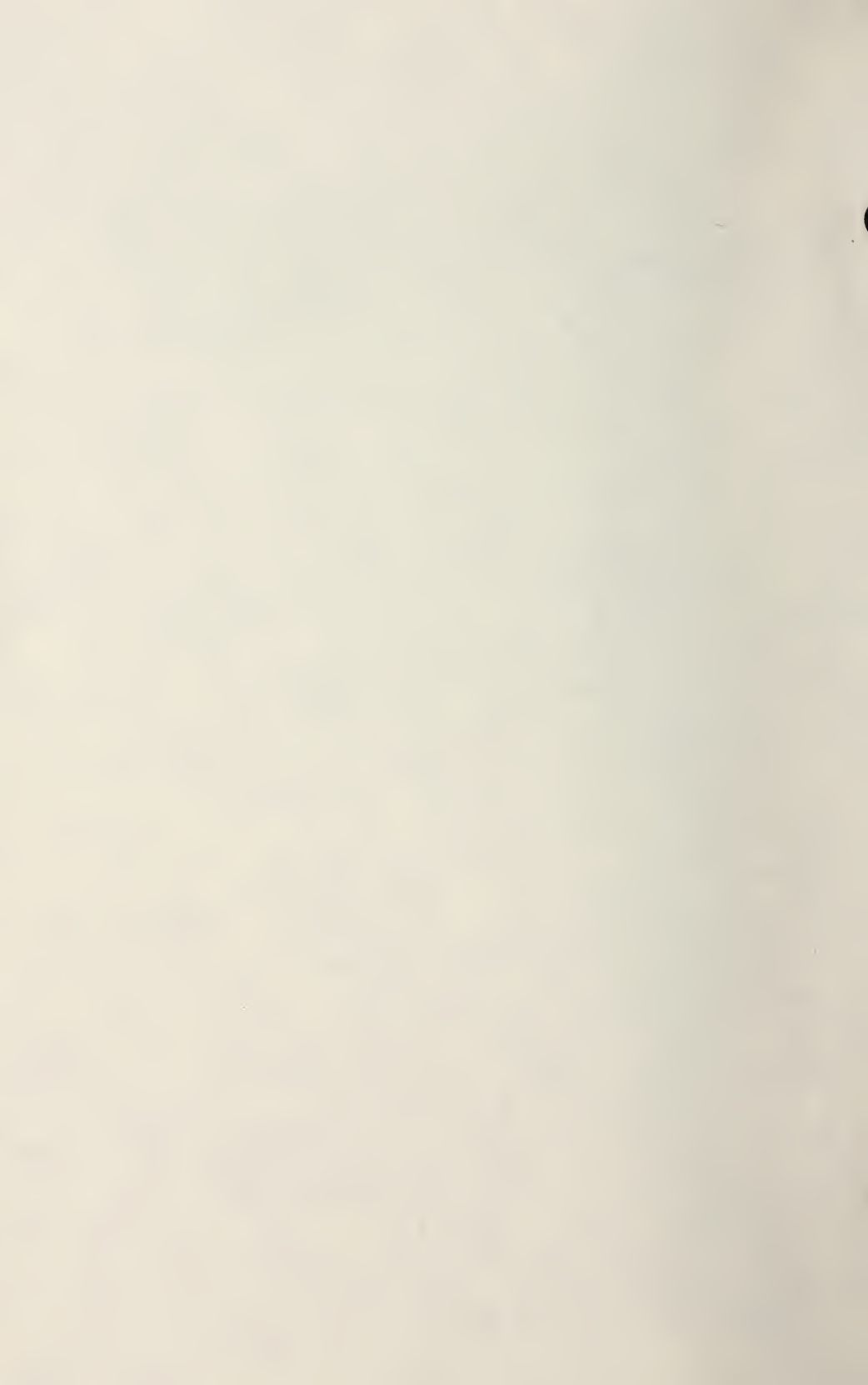
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